

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
<p>Soil Erosion - Sheet and Rill</p>	<p>Detachment and transport of soil particles caused by rainfall splash and runoff degrade soil quality.</p>	<p>Sheet and rill erosion does not exceed the Soil Loss Tolerance "T".</p>	<p>Tons/Acre/Year - average annual tons of erosion reduced per acre for the field or planning area/unit</p>	<p><u>CROP - HAYLAND</u> Indicator: Average annual erosion rate (tons/acre) from the Revised Universal Soil Loss Equation 2. For locations with less than 12 inches of rainfall, use either RUSLE 2 or assume 1.0 ton of soil loss per year for Sheet & Rill. Target: The rate of water erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (= or >10% within a management unit <u>on the dominant critical area</u>).</p> <p><u>PASTURE:</u> Indicator: Pasture Condition score for soil erosion indicators. (Sheet, rill, wind, stream bank and/or shoreline, and gully). Target Value: Individual erosion indicator values of 4 or higher.</p> <p><u>FOREST - HEADQUARTERS</u> Indicator: Client interviews and site observations to discover erosion evidence. Target Value: No observable erosion.</p>	<ul style="list-style-type: none"> • Visual assessment (pedestals, rills) (Range) • Erosion-bridge method; erosion meters (Range) • Special inventory methods (e.g., Rangeland Health Evaluation Worksheet) • RUSLE2 (Cropland & Hayland) <p><u>CROPLAND TOOLS:</u> RUSLE 2 http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/AG28.doc (Instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/nm-moses.zip (database) http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm (program)</p> <p><u>PASTURE TOOL:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>

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Soil					
<p>Soil Erosion – Wind</p>	<p>Detachment and transport of soil particles caused by wind degrade soil quality and/or damage plants.</p>	<p>Wind erosion does not exceed the Soil Loss Tolerance “T” or, for plant damage, does not exceed Crop Damage Tolerances.</p>	<p>Tons/Acre/Year - average annual tons of erosion reduced per acre for the field or planning area/unit</p>	<p><u>CROP - HAYLAND</u> Indicator: The Wind Erosion Equation Prediction System (WEPS), average annual wind erosion rate (tons/acre) will be used to establish the rate. Target: The rate of wind erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (= to >10% within a management unit) that is the highest I value.</p> <p><u>PASTURE</u> Indicator: Pasture Condition score for soil erosion indicators. (Sheet, rill, wind, stream bank and/or shoreline, and gully). Target Value: Individual erosion indicator values of 4 or higher.</p> <p><u>FOREST - HEADQUARTERS</u> Indicator: Client interviews and site observations to discover erosion evidence. Conduct the Wind Erosion Prediction System (WEPS). Target Value: The rate of wind erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (= to > 10% within a management unit).</p>	<ul style="list-style-type: none"> • Visual assessment (pedestals, blow-out areas) • Special inventory methods (e.g., Rangeland Health Evaluation Worksheet) • Erosion prediction tool, i.e., WEPS (WEQ) <p><u>CROPLAND TOOL:</u> WEPS http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag55(rev)a1.pdf</p> <p><u>PASTURE TOOL:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p> <p><u>FOREST AND HEADQUARTERS TOOL:</u> Conduct the Wind Erosion Prediction System (WEPS). http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag55(rev)a1.pdf</p>

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Soil					
Soil Erosion - Ephemeral Gully	Small channels caused by surface water runoff degrade soil quality and tend to increase in size. On cropland, they can be obscured by heavy tillage.	Surface water runoff is controlled sufficiently to stabilize the small channels and prevent reoccurrence of new channels.	Tons/Year - average annual tons of erosion reduced for the field or planning area/unit	<p><u>CROP – HAYLAND – FOREST - HEADQUARTERS</u> Indicator: If field observations indicate there is active discernable ephemeral gully erosion, then the Voided Area Method will be used. Target: The rate of ephemeral gully erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (= to >10% within a management unit).</p> <p><u>PASTURE</u> Indicator: Pasture Condition score for soil erosion indicators. (Sheet, rill, wind, stream bank and/or shoreline, and gully). Target Value: Individual erosion indicator values of 4 or higher.</p>	<ul style="list-style-type: none"> • Visual assessment • Volume calculation <p><u>CROPLAND:</u> Use the volume calculation in the spreadsheet. http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag60.doc (instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag55.xls (workbook)</p> <p><u>PASTURE TOOL:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p> <p><u>FOREST AND HEADQUARTERS TOOL:</u> The Voided Area Method will be used to estimate the erosion rate over time. The NM-ECS-2 or an equivalent method will be used to estimate the soil loss. http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag60.xls.</p>

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Soil Erosion - Classic Gully	Deep, permanent channels caused by the convergence of surface runoff degrade soil quality. They enlarge progressively by headcutting and lateral widening.	Surface water runoff is controlled sufficiently to stop progression of headcutting and widening.	Tons/Year - average annual tons of erosion reduced for the field or planning area/unit	<p><u>CROP – HAYLAND – FOREST - HEADQUARTERS</u> Indicator: If field observations indicate there is active discernable gully erosion, then the Voided Area Method will be used. Target: The rate of classic gully erosion shall not exceed T (annual soil loss tolerance) for a soil map unit of a manageable size (= to >10% within a management unit).</p> <p><u>PASTURE</u> Indicator: Pasture Condition score for soil erosion indicators. (Sheet, rill, wind, stream bank and/or shoreline, and gully). Target Value: Individual erosion indicator values of 4 or higher.</p>	<ul style="list-style-type: none"> • Visual assessment • Volume calculation • Aerial photo trend analysis <p><u>CROPLAND:</u> Use the volume calculation in the spreadsheet. http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag60.doc (instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag55.xls (workbook)</p> <p><u>PASTURE TOOL:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p> <p><u>FOREST AND HEADQUARTERS TOOL:</u> The Voided Area Method will be use to estimate the erosion rate over time. The NM-ECS-2 or an equivalent method will be used to estimate the soil loss. http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag60.xls.</p>

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Soil					
<p>Soil Erosion - Streambank</p>	<p>Accelerated loss of streambank soils restricts land and water use and management.</p>	<p>Accelerated streambank soil loss does not exceed a level commensurate with upstream land use and normal geomorphological processes on site.</p>	<p>Tons/Year - average annual tons of erosion reduced for the field or planning area/unit</p>	<p><u>ALL LAND USES</u> Indicator: If perennial or intermittent stream is in or adjacent to management unit then the indicators are the Applied Fluvial Geomorphology Classification procedure by Rosgen and the NRCS Stream Visual Assessment Protocol (SVAP). Target: The SVAP rating must be 7.5 or more for Bank Stability.</p>	<ul style="list-style-type: none"> • Visual assessment, e.g., Stream Visual. The Applied Fluvial Geomorphology Classification by Rosgen procedure is used to inventory and classify the stream. The NRCS Stream Visual Assessment Protocol (SVAP) NM Biological Technical Note 47 is used to evaluate conditions and indicates adequate treatment. Assessment Protocol, Proper Functioning Condition (PFC) • Aerial photo trend analysis • Engineering Field Handbook, Chapter 16 <p>The assessment tool is located : http://www.nm.nrcs.usda.gov/technical/tech-notes/bio/bio47.pdf The Applied Fluvial Geomorphology Classification by Rosgen procedure is used to inventory and classify the stream.</p>

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Soil					
Soil Erosion - Shoreline	Soil is eroded along shorelines by wind and wave action, causing physical damage to vegetation, limiting land use, or creating a safety hazard.	Shoreline erosion is stabilized to a level that does not restrict the use or management of adjacent land, water or structures.	Tons/Year - average annual tons of erosion reduced for the field or planning area/unit	<p><u>ALL LAND USES</u></p> <p>Indicator: Vertical banks or cuts. Near shore increases in turbidity.</p> <p>Target: Shoreline erosion is stabilized to a level that does not restrict the use or management of adjacent land, water or structures.</p>	<ul style="list-style-type: none"> • Visual assessment • Aerial photo trend analysis • Volume calculation • Erosion transects/pins
Soil Erosion – Irrigation-induced	Improper irrigation water application and equipment operation are causing soil erosion that degrades soil quality.	Irrigation-induced erosion does not exceed the Soil Loss Tolerance “T”.	Tons/Acre/Year - average annual tons of erosion reduced per acre for the field or planning area/unit	<p><u>CROP</u></p> <p>Indicator: If client has furrow irrigation and the interview and/or field observations indicate sedimentation at the end of the furrows or erosion within the furrow, then use the Sediment-Erosion from Furrow Irrigation (FUSED) program to quantify the average annual erosion rate (tons/acre) on the upper part of the field. (Call State Agronomist)</p> <p>Target: The rate of water erosion shall not exceed T (annual soil loss tolerance) for a soil of a manageable size (= to >10%) within a planning unit.</p> <p>Other land uses are NA</p>	<ul style="list-style-type: none"> • Sediment-Erosion from Furrow Irrigation (FUSED) program Call the State Agronomist

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Soil Erosion – Mass Movement	Soil slippage, landslides, or slope failure, normally on hillsides, result in large volumes of soil movement	Shallow slumps, slides, or slips are prevented or minimized so that the mass movement of earth material does not exceed naturally occurring rates.	Tons/Year - average annual tons of erosion reduced for the field or planning area/unit	<p><u>FOREST – HEADQUARTERS:</u> Indicator: Observation and interview</p> <p>Target: Designs indicate that human activities do not undercut toe slopes or overload tops of slopes.</p> <p>Other land uses are NA</p>	<ul style="list-style-type: none"> • Visual assessment • Aerial photo trend analysis • Volume calculation • Results & predictions compared to National Engineering Handbook, Section 3, Sedimentation, Chapter 3 pg 14.
Soil Erosion – Road, road sides and Construction Sites	Soil loss occurs on areas left unprotected during or after road building and/or construction activities.	Sites are adequately protected from soil loss during and after road building and construction activities.	Tons/Year - average annual tons of erosion reduced for the field or planning area/unit	<p><u>ALL LAND USES</u> Indicator: RUSLE 2 will be used to evaluate water erosion and sedimentation. The Wind Erosion Prediction System (WEPS). Target: The before rate of erosion will be compared to the after construction rate. There rate of erosion and sedimentation shall not be increased after the project is completed. Sedimentation and Wind erosion shall be controlled during construction.</p>	<ul style="list-style-type: none"> • Visual assessment • Volume Calculation • Water and wind erosion prediction tools (RUSLE2 and WEQ) <p>RUSLE 2 http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag28.doc (Instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/nm-moses.zip (database) http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm (program)</p> <p>WEPS http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag55(rev)a1.pdf</p> <ul style="list-style-type: none"> • FOTG Standards and Specifications, the National Engineering Handbook 642 Part 5 and the Engineering Field Manual Chapters 2, 3 and 4.

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Soil Condition - Organic Matter Depletion	Soil organic matter has lowered or will diminish to a level that degrades soil quality.	Soil Conditioning Index is positive.	Soil Conditioning Index improvement - positive improvement in index for the field or planning area/unit	<p>CROP - HAYLAND Indicator: Soil Conditioning Index. RUSLE 2 will be used to establish an index for the rotation. Target: Soil condition is maintained or improving. An index score of 0 for maintaining, or a positive number for improving is required.</p> <p>PASTURE Indicator: Pasture Condition score for soil erosion indicators. (Sheet, rill, wind, stream bank and/or shoreline, and gully). Target Value: Individual erosion indicator values of 4 or higher.</p>	<ul style="list-style-type: none"> • Soil Conditioning Index • Soil testing and analysis <p>CROPLAND – HAYLAND RUSLE 2 http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/AG28.doc (Instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/nm-moses.zip (database) http://fargo.nserl.purdue.edu/rusle2_dataweb/RUSLE2_Index.htm (program)</p> <p>PASTURE TOOL: Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>
Soil Condition – Rangeland Site Stability	The capacity to limit redistribution and loss of soil resources (including nutrients and organic matter) by wind and water.	Indicators of Rangeland Health Attribute rating for Soil/Site Stability show Slight to Moderate or less departure from Ecological Site Description (ESD)	Departure from Ecological Reference Sheet (ESD) categories – amount of departure, by numeric value, from Ecological Reference Sheet for the field or planning area/unit. 1=None to Slight, 2=Slight to Moderate, 3=moderate, 4=Moderate to Extreme, 5=Extreme	<p>RANGE Indicator: Soil Site Stability departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between 1 none to slight and 2 slight to moderate for Soil Site Stability.</p>	<p>RANGE TOOLS: Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet , National Range & Pasture Handbook http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Ecological Site Description Reference Sheet.</p>

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Soil					
Soil Condition - Compaction	Compressed soil particles and aggregates caused by mechanical compaction adversely affect plant-soil-moisture relationships.	Mechanically compacted soils are renovated sufficiently to restore plant root growth and/or water movement.	Non Measurable	<p><u>CROP - HAYLAND</u> Indicator: If client interview reveals the field has not been sub-soiled or deep chisel in the last 3 years, a shovel or tile probe will be used to detect the layer when the soil is at or near field water holding capacity Target: No detectable layer. If a shovel or tile probe can be pushed through the soil root zone without detecting a hard layer, the soil is OK. Typically, the layers are formed just below the tillage layer.</p> <p><u>PASTURE</u> Indicator: Pasture Condition score for soil compaction indicator. Target: Individual compaction indicator value of 4 or higher.</p>	<ul style="list-style-type: none"> Assessment of plant root systems Bulk density test-Soil Quality Kit Dial penetrometer <p><u>CROPLAND TOOL:</u> A shovel use as explained.</p> <p><u>PASTURE TOOLS:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>
Soil Condition - Subsidence	Loss of volume and depth of organic soils due to oxidation caused by above normal microbial activity resulting from excessive drainage or extended drought.	The timing and regime of soil moisture is managed to attain acceptable subsidence rates.	Inches/Acre/Year - average annual inches of subsidence reduced per acre for the field or planning area/unit	N/A.	<ul style="list-style-type: none"> Visual assessment Inventory of volume and depth Soil probes and witness poles

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<p>Soil Condition - Contaminants - Salts and Other Chemicals</p>	<p>Inorganic chemical elements and compounds such as salts, selenium, boron, and heavy metals restrict the desired use of the soil or exceed the soil buffering capacity</p>	<p>Salinity levels cause less than a 10% decrease in plant yield. Other contaminants do not exceed plant tolerances or are below toxic levels for plants or animals.</p>	<p>Electrical Conductivity (EC) – average reduction in EC for the field or planning area/unit</p>	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: If the client interview and/or field observations indicate there is a problem with crop growth and irrigation water has been applied correctly, the NM-NRCS Irrigation Leaching Index and Salt Management Tool will be the indicator. Target: Maintain electrical conductivity in the soil so that no more than a 10% yield reduction of the selected crop occurs. <u>RANGE</u> Indicator: If Bio-Solids have been applied then soil test. Target: Federal, State, and local standards. See NM Nutrient Management Standard for maximum levels. <u>HEADQUARTERS - FOREST</u> Indicator: Observation and interview or Soil test. Target: Federal, State, and local laws and standards are met. Soil contaminants are absent or present at levels that do not adversely affect other resources.</p>	<ul style="list-style-type: none"> • Soil test • Soil Quality Kit- EC meter • Farm*A*Syst assessment <p><u>CROPLAND TOOL:</u> Use the NM Irrigation Leaching Index and Salt Mgt. Tool http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag61.doc (instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag61.xls (worksheet) http://www.nm.nrcs.usda.gov/technical/fotg/section-1/irrigationguide.html (irrigation water mgt) <u>RANGE TOOLS:</u> Fields that have had human or animal bio-solids applied will be monitored (soil tested) before a second application to see that the federal, state, and local standards are met for contaminants. http://www.nm.nrcs.usda.gov/technical/fotg/section-4/standards/590.pdf</p>

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Soil					
Soil Condition – Contaminants: Animal Waste and Other Organics - N	Nitrogen nutrient levels from applied animal waste and other organics restrict desired use of the land.	Nitrogen nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results.	Pounds/Acre/Year – average annual pounds of nitrogen (N) reduced per acre for the field or planning area/unit	<p><u>CROP – HAYLAND</u> Indicator: N applied from organic sources using the NMSU Soil Test Interpretation Report Software. Target: N application rate (lbs/ac) not greater than 110% of the agronomic rate when the soil test rates are less than 30 ppm and 30 lbs/ac N, ¼ of the way through the growing season, if the second soil test drops below 30 ppm NO₃-N.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> NMSU Soil Test Interpretation Report Software <p>http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc (instructions)</p> <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls (worksheet)</p> <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations</p> <p>http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software</p> <p>http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc</p> <p>And</p> <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls</p> <p>Fertilizer Storage and Handling Worksheet, WQ Tech Note 10</p> <p>http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc</p> <p>And Livestock manure storage and livestock yard management worksheets</p> <p>http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

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Soil Condition – Contaminants: Animal Waste and Other Organics - P	Phosphorus nutrient levels from applied animal waste and other organics restrict desired use of the land	Phosphorus nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results.	Pounds/Acre/Year – average annual pounds of phosphorus (P) reduced per acre for the field or planning area/unit	<p><u>CROP – HAYLAND</u> Indicator: NM P index tool and P index for site. Target: P based manure application when the P index is greater than 27. See Technical Note</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> P Assessment Tool http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag57.doc (instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag57.xls (worksheet) <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

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Soil					
<p>Soil Condition – Contaminants: Animal Waste and Other Organics - K</p>	<p>Potassium nutrient levels from applied animal waste and other organics restrict desired use of the land</p>	<p>Potassium nutrient application levels do not exceed soil storage/plant uptake capacities based on soil test recommendations and risk analysis results.</p>	<p>Pounds/Acre/Year – average annual pounds of potassium (K) reduced per acre for the field or planning area/unit</p>	<p><u>CROP – HAYLAND</u> Indicator: Crop yield estimate, Soil Test and the NMSU Soil Test Interpretation Report Software and Forage Feed Evaluation. Target: K application rate (lbs/ac) not greater than 110% of the agronomic rate for the N need for the crop, and a K balance in the forage acceptable for feed. This will apply more than the crop needs in some cases.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc (instructions) http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls (worksheet) Forage feed test. <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
Soil Condition – Contaminants: Commercial Fertilizer - N	Over application of nitrogen degrades plant health and vigor or exceeds the soil capacity to retain nutrients.	Soil nutrient levels of nitrogen do not exceed crop needs based on realistic yield goals, and appropriate pH levels are maintained.	Pounds/Acre/Year – average annual pounds of nitrogen (N) reduced per acre for the field or planning area/unit	<p><u>CROP – HAYLAND</u> Indicator: Crop yield estimate, Soil Test and the NMSU Soil Test Interpretation Report Software Target: N application rate (lbs/ac) not greater than 110% of the agronomic rate.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc (instructions) http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls (worksheet) <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
Soil Condition – Contaminants: Commercial Fertilizer - P	Over application of phosphorus degrades plant health and vigor or exceeds the soil capacity to retain nutrients.	Soil nutrient levels of phosphorus do not exceed crop needs based on realistic yield goals, and appropriate pH levels are maintained.	Pounds/Acre/Year – average annual pounds of phosphorus (P) reduced per acre for the field or planning area/unit	<p><u>CROP – HAYLAND</u> Indicator: Crop yield estimate, Soil Test and the NMSU Soil Test Interpretation Report Software Target: P application rate (lbs/ac) not greater than 110% of the agronomic rate.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc (instructions) http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls (worksheet) <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#WaterQuality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
<p>Soil Condition – Contaminants: Commercial Fertilizer - K</p>	<p>Over application of potassium degrades plant health and vigor or exceeds the soil capacity to retain nutrients.</p>	<p>Soil nutrient levels of potassium do not exceed crop needs based on realistic yield goals, and appropriate pH levels are maintained.</p>	<p>Pounds/Acre/Year – average annual pounds of potassium (K) reduced per acre for the field or planning area/unit</p>	<p><u>CROP – HAYLAND</u> Indicator: Crop yield estimate, Soil Test and the NMSU Soil Test Interpretation Report Software Target: K application rate (lbs/ac) not greater than 110% of the agronomic rate.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: Field Application and Management: Site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate within the root zone. Target: Animal wastes are stored, applied, and disposed so water quality standards are not violated and soil is not contaminated.</p>	<p><u>CROP – HAYLAND</u></p> <ul style="list-style-type: none"> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc (instructions) http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls (worksheet) <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
Soil Condition - Contaminants - Residual Pesticides	Residual pesticides in the soil have an adverse effect on non-target plants and animals.	Pesticides are applied, stored, handled, and disposed of so that residues in the soil do not adversely affect non-target plants and animals.	Non Measurable	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: If the client interview indicates there has been a spill or an off label application of a pesticide, a sample planting of the crop should be done prior to planting the field. Target: The sample planting grows.</p> <p><u>RANGE</u> Indicator: Client interview field observation and client records indicate excess application of pesticides. http://www.greenbook.net/index.html Target: Pesticide levels no longer restricting desired use. Pesticides are applied according to labeled instructions and stored and disposed according to label.</p> <p><u>FOREST – HEADQUARTERS</u> Indicator: Records of field application, applied management, site visit. Target: Pesticides are applied according to labeled instructions and stored and disposed so that water quality standards are not Violated.</p>	<ul style="list-style-type: none"> • Visual assessment • WIN-PST • Soil test • Plant and animal tissue test <p><u>RANGE TOOLS:</u> Interview with client, Pesticide application records, Field Office Technical Guide http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html, Pesticide Labels. Guide for Commercial/ Noncommercial Applicators (Applying Pesticides Correctly). Labels & MSDSs</p> <p><u>FOREST – HEADQUARTERS:</u> Interview with client, Pesticide application records, Field Office Technical Guide http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html Pesticide Labels. Guide for Commercial/Noncommercial Applicators (Applying Pesticides Correctly). Labels and MSDSs\ http://www.greenbook.net/index.html</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Soil					
<p>Soil Condition - Damage from Sediment Deposition</p>	<p>Sediment deposition damages or restricts land use/management or adversely affects ecological processes.</p>	<p>Sediment deposition is sufficiently reduced to maintain desired land use/management and ecological processes.</p>	<p>Acres/Year - average annual acres of sediment deposition reduced for the field or planning area/unit</p>	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: Client interviews and/or field observations are used to determine if deposition or sedimentation is causing damage to property, vegetation or other resources. Target: No detectable damage occurs to property, vegetation or other resources.</p> <p><u>RANGE</u> Indicator: Soil Site Stability, Hydrologic Function and Biotic integrity departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none to slight and slight to moderate for Soil Site Stability, Hydrologic Function and Biotic Integrity.</p> <p><u>FOREST – HEADQUARTERS</u> Indicator: Deposition of sediment is estimated by measuring the depth, estimating the safety hazard or damage, by observation, and by interviewing the client and others. Target: No detectable damage occurs to vegetative cover, surface water quality or property.</p>	<ul style="list-style-type: none"> • Visual assessment • Plant and animal community assessment <p><u>RANGE TOOLS:</u> Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, http://policy.nrcs.usda.gov/scripts/lpsis.dll/H/H_190_NRPB_Content.htm National Range & Pasture Handbook.</p> <p><u>FOREST – HEADQUARTERS TOOLS:</u> Outside the management unit observations of property damage, depth of sediment measurements, and water channel assessments.</p> <p>See National engineering handbook, Section 3, Chapter 5.</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quantity – Rangeland Hydrologic Cycle	The capacity to capture, store, and safely release water from rainfall, run-on and snowmelt (where relevant).	Indicators of Rangeland Health Attribute rating for Hydrologic Cycle show Slight to Moderate or less departure from Ecological Site Description (ESD)	Departure from Ecological Reference Sheet (ESD) categories – amount of departure, by numeric value, from Ecological Reference Sheet for the field or planning area/unit. 1=None to Slight 2=Slight to Moderate 3=Moderate 4=Moderate to Extreme 5=Extreme	RANGE Indicator: Hydrologic Cycle departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between 1 none to slight and 2 slight to moderate for hydrologic function.	RANGE TOOLS: Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, National Range & Pasture Handbook http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPH_Content.htm Ecological Site Description Reference Sheet.
Water Quantity - Excessive Seepage	Subsurface water oozing to the surface restricts land use and management.	Subsurface water is managed to limit periods of saturation that are unfavorable to the present or intended land use. Management complies with wetland policies.	Acres/Year - average annual acres of seep reduced for the field or planning area/unit	CROP - HAYLAND - PASTURE Indicator: Client interview and/or field observations indicate water flows to the surface and restricts crop production Target: No crop restrictions, with current wetland guidelines being met. RANGE Indicator: Hydraulic Function departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none too slight and slight to moderate for Hydrologic Function with current wetland guidelines being met. FOREST Indicator: Observable damage from seeps. Target: Subsurface water flowing to surface does not limit plant production. HEADQUARTERS Indicator: Observable damage from ponding and runoff. Target: Flooding (ponding) and runoff does not limit operations.	<ul style="list-style-type: none"> • Visual Assessment (physical presence of water, prevalence of hydrophytic vegetation, etc.) • Client interview • Area measurements RANGE TOOLS: Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPH_Content.htm FOREST AND HEADQUARTERS TOOLS: Observation Over time and client interviews.

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quantity - Excessive Runoff, Flooding, or Ponding	The land becomes inundated restricting land use and management.	Excess water amounts and/or rates of flow are controlled consistent with desired present or intended land use goals and wetland policies.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE – FOREST</u></p> <p>Indicator: Client interviews and/or field observations indicate damage from ponding and runoff.</p> <p>Target: Flooding (ponding) and runoff does not limit crop or plant production, with current wetland guidelines being met.</p> <p><u>RANGE</u></p> <p>Indicator: Hydraulic Function departure from Ecological Site Description or reference area.</p> <p>Target: Area evaluated shows a preponderance of evidence that fits between none too slight and slight to moderate for Hydrologic Function with current wetland guidelines being met.</p> <p><u>HEADQUARTERS</u></p> <p>Indicator: Observation of vegetation and the water table depth from a drainage survey.</p> <p>Target: The shallow water table will be at or below level where it limits operations.</p>	<ul style="list-style-type: none"> • Visual assessment • Client interview • Stream Visual Assessment Protocol • National Engineering Handbook (EFH – chapter 2 and 3) • Hydrologic models, e.g. HECRAS, TR-20, TR-55 <p><u>RANGE TOOLS:</u> Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm</p> <p><u>HEADQUARTERS TOOLS:</u> If a problem is noted then a drainage survey will be done to establish the shallow water table depth.</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
<p>Water Quantity - Excessive Subsurface Water</p>	<p>Water saturates upper soil layers restricting land use and management.</p>	<p>Subsurface water is managed to limit periods of saturation compatible with the present or intended land use and wetland policies.</p>	<p>Non Measurable</p>	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: If the client interview and/or field observation indicates excess water in the root zone is inhibiting crop production then a drainage survey will be carried out. Target: Crop production not inhibited, with current wetland regulations being met. <u>RANGE</u> Indicator: Hydraulic Function departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none too slight and slight to moderate for Hydrologic Function with current wetland guidelines being met. <u>FOREST</u> Indicator: Jurisdictional wetland criteria. Target: The shallow water table will be below 20 inches during the growing season. Wetland values are enhanced when determined to be wetland.</p>	<ul style="list-style-type: none"> • Visual assessment of soil cores and coring holes • Plant quality and quantity measurements • National Engineering Handbook, Part 650 (EFH-Chapter 14) <p><u>RANGE TOOLS:</u> Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, National Range & Pasture Handbook http://policy.nrcs.usda.gov/scripts/lpsis.dll/H/H_190_NRP_H_Content.htm</p> <p><u>FOREST TOOLS:</u> A hydric soil survey will be done to determine wetland and establish the shallow water table during growing season.</p> <p>See NRCS NFSAM and ACOE 1987 Wetland Manual for wetland criteria for depth to water.</p>
<p>Water Quantity - Drifted Snow</p>	<p>Wind-blown snow deposits and accumulates around and over surface structures restricting ingress, egress and conveyance of humans and animals.</p>	<p>Snowdrifts are reduced or prevented to allow ingress, egress, and conveyance of humans and animals.</p>	<p>Non Measurable</p>	<p>This is not a problem in NM, NA.</p>	<ul style="list-style-type: none"> • Visual assessment • Client interview • Depth and area measurements

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quantity - Inadequate Outlets	Natural or constructed outlets too small to remove excess water in a timely manner.	Outlets are designed, installed, upgraded or maintained to adequately convey water for present or intended uses.	Non Measurable	<p><u>ALL LAND USES</u></p> <p>Indicator: Observation and interview with client.</p> <p>Target: Outlets allow water to be safely discharged so that there is no discernable erosion of other adverse effect.</p>	<ul style="list-style-type: none"> • Visual assessment • Client interview • National Engineering Handbook, part 650 (EFH – Chapters 2,3,7) • Hydrologic models, e.g. HECRAS, TR-20, TR-55 <p>TOOLS: Field Office Technical Guide Standards and Specifications http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html Engineering Field Handbook, Site Observation and interview with client. Client will obtain all necessary easements and/permits</p>
Water Quantity - Inefficient Water Use on Irrigated Land	Limited water supplies are not optimally utilized.	Land and water management is planned and coordinated to provide optimal use of natural and applied moisture.	Inches/Acre/Year - average annual inches of water used more efficiently per acre for the field or planning area/unit	<p><u>CROP - HAYLAND – PASTURE – HEADQUARTERS</u></p> <p>Indicator: The client interview indicates that crop yields do not meet the client’s needs, and the Farm Irrigation Rating System (FIRS) indicates system efficiency is not at least 75% of the Potential Efficiency (PE) of the irrigation system.</p> <p>Target: Crop yields meet client needs, and at least 75% of the PE is met. <i>Example: graded border systems have a PE of 75%. 0.7 PE x .75 = 0.53 or 53%. 53% would be the minimum allowable efficiency for the graded border system.</i></p> <p><u>RANGE- FOREST – NA</u></p>	<ul style="list-style-type: none"> • Visual assessment • National Engineering Handbook, Part 652, Irrigation Guide • Crop quality and quantity measurements • Farm Irrigation Rating System (FIRS) <p>NM TOOL: Farm Irrigation Rating System (FIRS) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag62.doc (instructions) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag62.xls (worksheet)</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quantity - Inefficient Water Use on Non-irrigated Land	Natural moisture is not optimally utilized.	Management provides optimum use of natural moisture for the present or intended land use.	Inches/Acre/Year - average annual inches of water used more efficiently per acre for the field or planning area/unit	<p><u>CROP – HAYLAND</u> Indicator: Client interviews and/or field observation indicates low yields, high runoff and high evaporation loss due to inefficient management of water (such as excess tillage). Target: Client yield goals are met and there is no excessive runoff and/or high evaporation loss.</p> <p><u>RANGE</u> Indicator: Hydrologic Function departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none to slight and slight to moderate for Hydrologic Function.</p> <p><u>PASTURE:</u> Indicator: Client interview & Pasture Condition score for climatic stress indicator. Target Value: Individual climatic stress indicator value of 4 or higher. Available water meets clients planned pasture crop yield goal requirements.</p> <p><u>FOREST - HEADQUARTERS</u> Indicator: Site observation and interview with client. Target Value: Runoff is released at a safe non-erosive rate and sediment is not transported off-site.</p>	<ul style="list-style-type: none"> • Visual assessment • Plant or animal quality and quantity measurements • Engineering field manual <p><u>RANGE TOOLS:</u> Ecological Site Descriptions, Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet, National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsis.dll/H/H_190_NRPH_Content.htm</p> <p><u>PASTURE TOOLS:</u> Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lpsis.dll/H/H_190_NRPH_Content.htm Section IV FOTG http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html (Another pasture species or mix could also be selected)</p>
Water Quantity - Reduced Capacity of Conveyances by Sediment Deposition	Sediment deposits in ditches, canals, culverts, and other water conveyances reduce the desired flow capacity.	Conveyance structures are upgraded or maintained to adequately convey water for present or intended uses.	Cubic yards - Volume of sediment in cubic yards removed to maintain water conveyances for the field or planning area/unit.	<p><u>ALL LAND USES</u></p> <p>Indicator: If client interview and/or field observations indicate a problem, then conduct hydraulic and/or runoff calculations (NEFM).</p> <p>Target: No loss of conveyance and storage capacity in natural waterbodies, lakes, and streams.</p>	<ul style="list-style-type: none"> • Visual assessment • Client interview • National Engineering Handbook, Part 650 (EFH – Chapters 2,3,70) • Hydrologic models, e.g., HECRAS, TR-20, TR-55

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quantity - Reduced Storage of Water Bodies by Sediment Accumulation	Sediment deposits in water bodies reduce the desired volume capacity.	Water bodies and contributing source areas are treated to allow sufficient water storage for present and intended uses.	Acre-Inches/Year - Average annual reduction in acre-inches in sediment deposition within water bodies for the field or planning area/unit	<p><u>ALL LAND USES</u></p> <p>Indicator: If client interview and/or field observations indicate a problem, then conduct hydraulic and/or runoff calculations (NEFM).</p> <p>Target: No loss of conveyance and storage capacity in natural waterbodies, lakes, and streams.</p>	<ul style="list-style-type: none"> • Visual assessment • Depth and area measurements • National Engineering Handbook, Part 650 (EFH – Chapters 2,3,7,11)
Water Quantity - Aquifer Overdraft	Water withdrawals exceed recharge rates.	Land and water management are coordinated to conserve aquifer water levels.	Acre-Inches/Year - average annual reduction in acre-inches of groundwater overdraft for the field or planning area/unit	<p><u>ALL LAND USES</u></p> <p>Indicator: Water use</p> <p>Target: Water use and crop selection address the need to conserve water. Water use meets the water use efficiency listed under Water Quantity- Inefficient Water Use on Irrigated Land above.</p>	<ul style="list-style-type: none"> • See Water Quantity- Inefficient Water Use on Irrigated Land above.
Water Quantity – Insufficient Flows in Water Courses	Water flows are not consistently available in sufficient quantities to support ecological processes and land use and management.	Authorized uses and management of water are coordinated to minimize the impacts on water course flows.	<i>Non Measurable</i>	<p><u>ALL LAND USES</u></p> <p>Indicator: Base flow in the water course.</p> <p>Target: Maintain sufficient flow to support aquatic species and vegetation</p>	<ul style="list-style-type: none"> • Stream Visual Assessment Protocol • Water flow records • Gauge Station data • Consumptive use/allocation water rights • Habitat Evaluation Guides • National Biology Handbook

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quality - Harmful Levels of Pesticides in Groundwater	Residues resulting from the use of pest control chemicals degrade groundwater quality.	Pesticides are applied, stored, handled, disposed of, and managed so that groundwater uses are not adversely affected quality.	Non Measurable	<p><u>ALL LAND USES</u></p> <p>Indicator: If client interviews indicate pesticides are applied, the Leaching Hazard rating (ILP) on the Windows Pesticide Screening Tool (WIN-PST) will be used.</p> <p>Target: Two or more conservation treatment(s) are used when the Leaching Hazard rating (WIN-PST) is greater than Low or Very Low</p>	<ul style="list-style-type: none"> WIN-PST (Windows Pesticide Screening Tool – USDA/NRCS) NAPRA (National Agricultural Pesticide Risk Analysis – USDA/NRCS) Vadose zone and groundwater chemical sampling and assay <p><u>CROPLAND, HAYLAND, AND PASTURE</u> http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water9.doc</p> <p><u>RANGE</u> http://www.wcc.nrcs.usda.gov/water/quality/frame/pestmgt.html See Water Quality Technical Note 9. http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water9.doc</p>
Water Quality - Excessive Nutrients and Organics in Groundwater	Pollution from natural or human induced nutrients such as N, P, and organics (including animal and other wastes) degrades groundwater quality.	Nutrients and organics are stored, handled, disposed of, and applied such that groundwater uses are not adversely affected.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE – HEADQUARTERS - FOREST</u></p> <p>Indicator: If client interview indicates nutrients or organics are applied, then a soil test using the NMSU standards, and NM-NRCS Irrigated Leaching Index and Salt Management Tool will be run.</p> <p>Target: The rate of nutrient application does not exceed the nutrient recommendations using client established yield goals, and the irrigation leaching index does not show excess leaching.</p> <p><u>RANGE - NA</u></p>	<ul style="list-style-type: none"> National Engineering Handbook, Part 651, Ag. Waste Mgt. Field Handbook Phosphorus Leaching Index Farm*A*Syst Vadose zone and groundwater chemical/particle sampling and assay <p><u>CROPLAND, HAYLAND, PASTURE, HEADQUARTERS, AND FOREST</u> http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag61.doc http://www.nm.nrcs.usda.gov/technical/fotg/section-1/irrigationguide.html http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
<p>Water Quality - Excessive Salinity in Groundwater</p>	<p>Pollution from salts such as Ca, Mg, Na, K, HCO₃, CO₃, Cl, and SO₄ degrades groundwater quality.</p>	<p>Salts are stored, handled, disposed of, applied, and managed such that groundwater uses are not adversely affected.</p>	<p>Electrical Conductivity (EC)- average reduction in EC for the field or planning area/unit</p>	<p><u>CROP - HAYLAND – PASTURE - HEADQUARTERS</u> Indicator: If client interviews indicate manure or biosolid application and the Electrical Conductivity (EC) of the irrigation water is > 2 mmhos/cm at 25 degrees C, the NRCS Irrigation Leaching Index and Salt Management Tool and Irrigation Water Management will be used to set the required amount of leaching to maintain the correct salt balance in the crop root zone. Target: Maintain electrical conductivity in the soil so that no more than a 10% yield reduction of the selected crop occurs and apply water at a rate not greater than 0.75 inches/month over the salt leaching need and the crop CU for each month. <u>RANGE AND FOREST- NA</u></p>	<ul style="list-style-type: none"> • Vadose zone and groundwater salinity sampling (total dissolved solids [TDS] or electrical conductivity) and assay • National Engineering Handbook, Part 652, Irrigation Guide • Soil salinity sampling and assay <p><u>CROP - HAYLAND – PASTURE - HEADQUARTERS</u> NRCS Irrigation Leaching Index and Salt Management Tool http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag61.doc http://www.nm.nrcs.usda.gov/technical/fotg/section-1/irrigationguide.html</p>
<p>Water Quality - Harmful Levels of Heavy Metals in Groundwater</p>	<p>Natural or human induced metal pollutants present in toxic amounts degrade groundwater quality.</p>	<p>Materials containing heavy metals are stored, handled, disposed of, applied, and managed such that groundwater uses are not adversely affected.</p>	<p>Non Measurable</p>	<p><u>CROP - HAYLAND – PASTURE – HEADQUARTERS – FOREST</u> Indicator: If client interview indicates a bio-solid has been applied to the land in the past, an assessment using a soil test for metal compounds listed in Nutrient Mgt. Practice 590 standard will be made. Target: Values less than the National Levels or State set values for annual and lifetime levels.</p>	<ul style="list-style-type: none"> • Soil Testing • Vadose zone and groundwater chemical sampling and assay <p>The pre-application soil test. See the Nutrient Mgt. 590 for the maximum levels allowed. http://www.nm.nrcs.usda.gov/technical/fotg/section-4/standards/590.pdf</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quality - Harmful Levels of Pathogens in Groundwater	Kinds and numbers of viruses, protozoa, and bacteria are present at a level that degrades groundwater quality.	Materials that harbor pathogens are stored, handled, disposed of, applied, and managed such that groundwater uses are not adversely affected.	Non Measurable	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: If Client interviews and/or field observations indicate materials containing pathogens are applied, then use criteria in Nutrient Management Practice Standard (590). Target: Animal wastes are stored and applied so water quality standards are not violated. RANGE Indicator: If bio solids, municipal or industrial sludges are applied. Ground water test indicates acceptable levels of nitrates. Target: Animal wastes are stored and applied so ground water quality standards are not violated. FOREST - HEADQUARTERS Indicator: Field application and management site visit with predictive tools to determine if wastes are applied at rates, forms, and times following a nutrient budget, along with mitigating practices to minimize excessive leachate below the root zone. Target: Animal wastes are stored and applied so ground water quality standards are not violated</p>	<ul style="list-style-type: none"> • Soil testing • Vadose zone and groundwater chemical sampling and assay <p>RANGE TOOLS: Livestock Manure Storage, and Livestock Yard Management Worksheets., Water Quality Tech Note 10 NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#WaterQuality FOREST AND HEADQUARTERS TOOLS: Observations and client interviews followed by Livestock Manure Storage, and Livestock Yard Management Worksheets from farm-a-syst. NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#WaterQuality</p>
Water Quality - Harmful Levels of Petroleum in Groundwater	Fuel, oil, gasoline and other hydrocarbons present in toxic amounts degrade groundwater quality.	Petroleum products are used, stored, handled, disposed of, and managed such that groundwater uses are not adversely affected.	Non Measurable	<p><u>HEADQUARTERS</u> Indicator: If petroleum products are present, a Farm-A-Syst evaluation will be completed. Target: A ranking of low or low-moderate risk will be obtained with the Farm-A-Syst Petroleum Product Storage Worksheet.</p>	<ul style="list-style-type: none"> • Vadose zone and groundwater chemical sampling and assay • Farm-A-Syst. See Water Quality Tech Note 10. See http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.html <p>Complete the Petroleum Product Storage Worksheet: http://www.cahe/nmsu.edu/pubs/farmasyst</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quality - Harmful Levels of Pesticides in Surface Water	Pest control chemicals present in toxic amounts degrade surface water quality.	Pesticides are applied, stored, handled, disposed of, and managed such that surface water uses are not adversely affected	Non Measurable	<p>ALL LAND USES Indicator: If client interview indicates the pesticides have been applied use Solution Runoff Hazard (ISRP) and the Adsorbed Runoff Hazard (IARP) ratings from the Windows Pesticide Screening Tool (WIN-PST) Target: Two or more conservation treatments are required when the ratings (WIN-PST) are greater than Low or Very Low.</p>	<ul style="list-style-type: none"> WIN-PST (Windows Pesticide Screening Tool – USDA/NRCS) Surface water chemical sampling assay <p>ALL LAND USES: http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water9.doc and http://www.wcc.nrcs.usda.gov/water/quality/frame/pestmgt.html and http://www.greenbook.net/index.html</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quality - Excessive Nutrients and Organics in Surface Water	Pollution from natural or human induced nutrients such as N, P, and organics (Including animal and other wastes) degrades surface water quality.	Nutrients and organics are stored, handled, disposed of, and managed such that surface water uses are not adversely affected.	Non Measurable	<p><u>CROPLAND – HAYLAND - PASTURE</u> Indicator: If client interview indicates that nutrients and organics have been applied, use the NM Phosphorus Assessment Tool (P Index) and field observations of sediment leaving the field, including tail water, return flows, and storm runoff systems. Target: Fields with P Indexes > 27 and/or sediment reaching an intermittent or perennial stream, or water body will have treatment applied.</p> <p><u>RANGE - FOREST</u> Indicator: If nutrients or organics are applied or planned for application: Water Quality Indicators Guide for Nutrients and Animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p> <p><u>HEADQUARTERS</u> Indicator: If fertilizers are stored or applied in the headquarters area, then a current soil test using the NMSU standards, and Farm-A-Syst worksheets. Target: The fertilizer rate of application does not exceed the fertilizer recommendations using realistic yield goals, and the Irrigated Leaching Index does not show excess leaching and commercial fertilizers and livestock manure are stored and applied so that water quality standards are not violated.</p>	<ul style="list-style-type: none"> SVAP (Stream Visual Assessment Protocol – USDA/NRCS) P index National Engineering Handbook, Part 651, Ag. Waste Mgt. Field Handbook Surface water chemical/particle sampling and assay <p><u>CROPLAND, HAYLAND, AND PASTURE</u> NM Phosphorus Assessment Tool (P Index) http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/agr59.doc</p> <p><u>RANGE AND FOREST TOOLS:</u> WQIG, NM Water Quality Technical Note 10, NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p> <p><u>HEADQUARTERS TOOLS:</u> NMSU Soil Test Interpretation Report Software http://www.nm.nrcs.usda.gov/technical/tech-notes/agro/ag58.doc And http://www.nm.nrcs.usda.gov/technical/fotg/section-4/jobsheets/js590.xls Fertilizer Storage and Handling Worksheet, WQ Tech Note 10 http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.doc And Livestock manure storage and livestock yard management worksheets http://www.cahe.nmsu.edu/pubs/farmasyst/</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
<p>Water Quality - Excessive Suspended Sediment and Turbidity in Surface Water</p>	<p>Excessive concentrations of mineral or organic particles, algae, or organic stains degrade surface water quality.</p>	<p>Delivery or suspension of mineral and organic particles, and excessive algae growth or organic stains, is managed such that surface water uses are not adversely affected.</p>	<p>Non Measurable</p>	<p>ALL LAND USES Indicator: If client interview and/or field observations indicates excessive sedimentation and turbidity into surface waters, then use, Sediment Worksheets of the Water Quality Indicators Guide predictive tool on the runoff water of the management unit</p>	<ul style="list-style-type: none"> • Visual assessment • Client interview • SVAP (Stream Visual Assessment Protocol – USDA/NRCS) • WQIG, Water Quality Tech Note 10. • Surface water chemical/particle sampling and assay <p>ALL LAND USES: WQIG, Water Quality Tech Note 10. http://www.nm.nrcs.usda.gov/technical/technotes/water/water10.doc NMED – Water Quality Regulations</p>
<p>Water Quality - Excessive Salinity in Surface Water</p>	<p>Pollution from salts such as Ca, Mg, Na, K, HCO₃, HCO₃, CO₃, Cl, and SO₄ degrades surface water quality.</p>	<p>Salts are stored, handled, disposed of, applied, and managed so that surface water uses are not adversely affected.</p>	<p>Electrical Conductivity (EC)- average reduction in EC for the field or planning area/unit.</p>	<p>CROP - HAYLAND - PASTURE Indicator: For land with return flows from irrigation water, Electrical Conductivity Irrigation Water (ECiw) and Sodium Adsorption Ratio (SAR). Target: Return water will have an ECiw of <3.0 mmhos/cm at 25 degrees C and a SAR of <10</p>	<ul style="list-style-type: none"> • SVAP (Stream Visual Assessment Protocol – USDA/NRCS) – Salinity <p>NM TOOLS: Field measurements will be taken using an EC meter to determine the EC. If high, then the SAR should be determined by lab analyses. Colorado State University has a fact sheet, “Irrigation Water Quality Criteria” no. 0.506 used to set our criteria. Water with levels greater than the criterion is harmful to most pasture crop species. See http://www.ext.colostate.edu/pubs/crops/00506.html</p>
<p>Water Quality - Harmful Levels of Heavy Metals in Surface Water</p>	<p>Natural or human-induced metal pollutants are present in toxic amounts that degrade surface water quality.</p>	<p>Materials containing heavy metals are stored, handled, disposed of, applied, and managed so that surface water uses are not adversely affected.</p>	<p>Non Measurable</p>	<p>CROP – HAYLAND - PASTURE - RANGE Indicator: If client interview indicates bio-solid have been applied to the land in the past, a soil test for the state or federally regulated metal compounds will be made before additional material can be applied. Use guidelines in NM Nutrient Mgt. 590 practice standard. Target: Soil test values less than the National or State annual and lifetime levels.</p>	<ul style="list-style-type: none"> • Surface water chemical sampling and assay

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Water					
Water Quality - Harmful Temperatures of Surface Water	Undesired thermal conditions degrade surface water quality.	Use and management of land and water are coordinated to minimize impacts on surface water temperatures.	Non Measurable	<p><u>CROP – HAYLAND - PASTURE - RANGE</u> Indicator: Thermometer reading, lack of vegetation for thermal regulation of water, where water bodies, intermittent and perennial streams are present. Target: For Cold Water organisms a water temperature between 50 and 70 degrees F., and an overstory of shade vegetation. For Warm Water organisms a water temperature between 70 and 90 degree F., and an overstory of shade vegetation.</p>	<ul style="list-style-type: none"> SVAP (Stream Visual Assessment Protocol – USDA/NRCS) – canopy cover HSI model for target species (Habitat Suitability Index – USF&WS) Surface water temperature sampling and assay
Water Quality - Harmful Levels of Pathogens in Surface Water	Kinds and numbers of viruses, protozoa, and bacteria are present at a level that degrades surface water quality.	Materials that harbor pathogens are stored, handled, disposed of, applied, and managed so that surface water uses are not adversely affected.	Non Measurable	<p><u>CROP - HAYLAND - PASTURE</u> Indicator: Client interviews and field observations to determine if lesions, parasites, and fungus exist on fish and other organisms. Target: No visible signs of illness, or parasites on fish. <u>RANGE</u> Indicator: Water Quality Indicators Guide for animal Wastes (WQIG). Target: Good or Excellent Rating from WQIG.</p>	<ul style="list-style-type: none"> Surface water pathogen sampling and assay <p><u>RANGE TOOLS:</u> WQIG, NM Water Quality Technical Note 10 NMED – Water Quality Regulations http://www.nmenv.state.nm.us/Common/reg_s_idx.html#Water Quality</p>
Water Quality - Harmful Levels of Petroleum in Surface Water	Fuel, oil, gasoline and other hydrocarbons present in toxic amounts degrade surface water quality.	Petroleum products are used, stored, handled, and disposed of so that groundwater uses are not adversely affected.	Non Measurable	<p><u>HEADQUARTERS</u> Indicator: If petroleum products are present, a Farm-A-Syst evaluation will be completed. Target: A ranking of low or low-moderate risk will be obtained with the Farm-A-Syst Petroleum Product Storage Worksheet.</p>	<ul style="list-style-type: none"> Surface water chemical sampling and assay Farm-A-Syst. See Water Quality Tech Note 10. See http://www.nm.nrcs.usda.gov/technical/tech-notes/water/water10.html

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Air					
<p><i>Air Quality - Particulate matter less than 10 micrometers in diameter (PM 10)</i></p>	<p>Particulate matter less than 10 micrometers in diameter are suspended in the air causing potential health hazards to humans and animals.</p>	<p>Land use and management operations reduce PM-10 emissions into the atmosphere and comply with requirements of the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations</p>	<p>Pounds/Year-average annual pounds of reduced PM-10 emissions for the field or planning area/unit</p>	<p><u>CROP-HAYLAND-PASTURE</u> Indicator: Wind Erosion Equation Target: Soil loss at T or less (See Soil Erosion-Wind for details).</p> <p><u>RANGE-HEADQUARTERS</u> Indicator: Particulates shall not degrade air quality within or outside the planning area above local and state air quality standards. Target: Local and state air quality requirements for particulates are met.</p>	<ul style="list-style-type: none"> • Specific guidelines contained in State or Federal Implementation Plan; or other approved NRCS tool. • Wind Erosion Equation • NMED-Air Quality Standards. http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html • Field Office Technical Guides Practice Standards for Prescribed burning, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html
<p><i>Air Quality - Particulate matter less than 2.5 micrometers in diameter (PM 2.5)</i></p>	<p>Particulate matter less than 2.5 micrometers in diameter are suspended in the air causing potential health hazards to humans and animals.</p>	<p>Land use and management operations reduce PM-2.5 emissions into the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations.</p>	<p>Pounds/Year – average annual pounds of reduced PM-2.5 emissions for the field or planning area/unit</p>	<p><u>CROP-HAYLAND-PASTURE</u> Indicator: Wind Erosion Equation Target: Soil loss at T or less (See Soil Erosion-Wind for details).</p> <p><u>RANGE-HEADQUARTERS</u> Indicator: Particulates shall not degrade air quality within or outside the planning area below local and state air quality standards. Target: Local and State air quality requirements for particulates are met.</p>	<ul style="list-style-type: none"> • Specific guidelines contained in State or Federal Implementation Plan; or other approved NRCS tools • Air quality analysis • Wind Erosion Equation • NMED-Air Quality Standards. http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html • Field Office Technical Guides Practice Standards for Prescribed burning, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Air					
Air Quality - Excessive Ozone	High concentrations of ozone (O ₃) are adversely affecting human health, reducing plant yields, and creating smog.	Land use and management operations reduce ozone precursors and comply with requirements of the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations.	Pounds/Year – average annual pounds of reduced ozone precursor emissions for the field or planning area/unit	<p><u>CROP-PASTURE-HAYLAND-RANGE-HEADQUARTERS</u></p> <p>Indicator: Observations and interviews indicate present and planned activities may degrade air quality within or outside the planning area above national, local and state air quality standards.</p> <p>Target: National, State, and local air quality requirements for smoke and sediment particulates are met.</p>	<ul style="list-style-type: none"> • Specific guidelines contained in State or Federal Implementation Plan; or other approved NRCS tools • NMED-Air Quality Standards http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html • Field Office Technical Guides Practice Standards for Prescribed burning, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html
Air Quality - Excessive Greenhouse Gas – CO₂ (carbon dioxide)	Increased CO ₂ concentrations are adversely affecting ecosystem processes.	Land use and management operations reduce CO ₂ emissions into the atmosphere and comply with requirements of the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations.	Non Measurable	<p><u>CROP-PASTURE-HAYLAND</u></p> <p>Indicator for Burning: Observations and interviews indicate present and planned activities may degrade air quality within or outside the planning area above national, local and state air quality standards.</p> <p>Target: National, Local and state air quality requirements for smoke and sediment particulates are met.</p> <p>Indicator for Tillage: Soil Condition Index</p> <p>Target: SCI greater than or equal to 0.</p> <p><u>RANGE-HEADQUARTERS</u></p> <p>Indicator: Observations and interviews indicate present and planned activities may degrade air quality within or outside the planning area above national, local and state air quality standards.</p> <p>Target: National, local and State air quality requirements for smoke and sediment particulates are met.</p>	<ul style="list-style-type: none"> • Model simulations (Century, EPIC, CQUESTER); sampling for soil carbon or International Panel on Climate Change methodology; or other NRCS approved tools • Soil Condition Index, Spreadsheet or RUSLE2 • NMED-Air Quality Standards http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html • Field Office Technical Guides Practice Standards for Prescribed burning, Atmospheric Resource Quality Management • http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Air					
Air Quality - Excessive Greenhouse Gas – N₂O (nitrous oxide)	Increased N ₂ O concentrations are adversely affecting ecosystem processes.	Land use and management operations reduce N ₂ O emissions into the atmosphere and comply with requirements of the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations.	Non Measurable	<p><u>CROP-PASTURE-HAYLAND-RANGE-HEADQUARTERS</u></p> <p>Indicator: Observations and interviews indicate present and planned activities may degrade air quality within or outside the planning area above national, local and state air quality standards.</p> <p>Target: National, local and State air quality requirements for smoke and sediment particulates are met.</p>	<ul style="list-style-type: none"> • Model simulations (NLEAP or DayCENT), or IPCC methodology; or other NRCS approved tools • Field Office Technical Guides Practice Standards for Prescribed burning, Nutrient Management, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html • NMED-Air Quality Standards http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html
Air Quality - Excessive Greenhouse Gas – CH₄ (methane)	Increased CH ₄ concentrations are adversely affecting ecosystem processes. .	Land use and management operations reduce CH ₄ emissions into the atmosphere and comply with requirements of the State or Federal Implementation Plan and all applicable Federal, Tribal, State, and local regulations.	Non Measurable	<p><u>CROP-PASTURE-HAYLAND-RANGE-HEADQUARTERS</u></p> <p>Indicator: Observations and interviews indicate present and planned activities may degrade air quality within or outside the planning area above national, local and state air quality standards.</p> <p>Target: National, local and State air quality requirements for smoke and sediment particulates are met.</p>	<ul style="list-style-type: none"> • IPCC methodology; or other NRCS approved tools • Field Office Technical Guides Practice Standards for Prescribed burning, waste management, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html • NMED-Air Quality Standards http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html
Air Quality - Ammonia (NH₃)	Animal waste and inorganic commercial fertilizers emit ammonia that contributes to odor, is a PM _{2.5} precursor, and contributes to acid rain.	Land use and management operations reduce NH ₃ emissions and comply with requirements of all applicable Federal, Tribal, State, and local regulations.	Pounds/Year – average annual pounds of reduced NH ₃ emissions for the field or planning area/unit	<p><u>CROP-PASTURE-HAYLAND-RANGE-HEADQUARTERS</u></p> <p>Indicator: Particulates shall not degrade air quality within or outside the planning area above local and state air quality standards.</p> <p>Target: Local and State air quality requirements for particulates are met.</p>	<ul style="list-style-type: none"> • Approved NRCS technical guidance and tools • Field Office Technical Guides Practice Standards for Prescribed burning, Nutrient Management, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html • NMED-Air Quality Standards. http://www.nmenv.state.nm.us/NMED_regs/aqb_regs.html

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Air					
Air Quality - Chemical Drift	Materials applied to control pests drift downwind and contaminate/injure non-targeted fields, crops, soils, water, animals and humans.	Land use and management operations reduce chemical drift into the atmosphere and comply with all applicable Federal, Tribal, State, and local regulations, and applicable label directions.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE-RANGE-HEADQUARTERS</u></p> <p>Indicator: Use Client interview and/or field observation to determine off target damage.</p> <p>Target: Manufacturer labels and applicable laws and ordinances are followed so that there is no measurable damage to non-targeted species</p>	<ul style="list-style-type: none"> Approved NRCS technical guidance and tools http://www.greenbook.net/index.html http://www.nmenv.state.nm.us/NMED_regs/agb_regs.html Field Office Technical Guides Practice Standards for Pest Management, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html
Air Quality - Objectionable Odors	Land use and management operations produce offensive smells.	Odor-producing facilities and activities are planned and sited to mitigate potential nuisance impacts and meet all applicable Tribal, State, and local regulations.	Non Measurable	<p><u>CROP-HEADQUARTERS</u></p> <p>Indicator: Use client interview and/or field observation to determine if objectionable odors exist.</p> <p>Target: Timings of practice application and wind direction with regard to urban areas will be addressed to minimize the impacts, and all laws and ordinances will be complied with.</p>	<ul style="list-style-type: none"> Olfactory assessment Agricultural Waste Management Field Handbook (AWMFH) NRCS approved tools Field Office Technical Guides Practice Standards for Waste management, Atmospheric Resource Quality Management http://www.nm.nrcs.usda.gov/technical/otg/section-4/std-specs.html
Air Quality - Reduced Visibility	Sight distance is impaired due to airborne particles causing unsafe conditions and impeded viewing of natural vistas, especially in Class I viewing areas (primarily national parks and monuments).	Land use and management operations reduce particle emission into the atmosphere and comply with all applicable Federal, Tribal, State, and local regulations including State and local smoke and/or burn management plans.	Non Measurable	<p><u>CROP-PASTURE-HAYLAND-RANGE</u></p> <p>Indicator: Use client interview and/or field observation to determine if reduced visibility exists.</p> <p>Target: Land use and management operations comply with state and local smoke and/or burn management plans.</p>	<ul style="list-style-type: none"> Visual assessment Regional air partnership recommendations and/or state guidance for smoke management http://www.nmenv.state.nm.us/aqb/SMP/smp_index.html

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Air					
<p><i>Air Quality - Undesirable Air Movement</i></p>	<p>Wind velocities (too little or too much) reduce animal or plant productivity, impact human comfort and increase energy consumption.</p>	<p>Land use and management operations mitigate excessive or deficient air movement.</p>	<p>Non Measurable</p>	<p>N/A</p>	<ul style="list-style-type: none"> • Visual assessment • Anemometers • Approved NRCS technical guidance and tools
<p><i>Air Quality - Adverse Air Temperature</i></p>	<p>Air temperatures (too cold or too hot) reduce animal or plant productivity, impact human comfort and increase energy consumption.</p>	<p>Land use and management operations mitigate temperature extremes.</p>	<p>Non Measurable</p>	<p>N/A</p>	<ul style="list-style-type: none"> • Chill factor indices; heat indices • Air temperature assessment

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
Plants not adapted or suited	Plants are not adapted and/or suited to site conditions or client objectives.	<p>Selected plants are adapted to the soil and climatic conditions or the site is modified to make it suitable for the desired plants. Plants are sustainable, do not negatively impact other resources, and meet client objectives. For specific land uses, additional criteria apply:</p> <p>Cropland: A healthy stand with vigorous growth. Yields 75% of client expectations.</p> <p>Rangeland: Plants on or planned for the site are listed in applicable Ecological Site Descriptions (ESD)</p> <p>Pastureland: Plants on or planned for the site have a site adaptation score greater than 3 using Pasture Condition Scoring (PCS) and are listed in applicable Forage Suitability Groups (FSG) reports.</p> <p>Hayland: Plants on or planned for the site are listed in applicable Forage Suitability Groups (FSG) reports.</p> <p>Forestland/Agroforest: Plants on or planned for the site are listed in Ecological Site Descriptions (ESD)</p>	Non Measurable	<p>CROPLAND</p> <p>Indicator: Client interview indicates that yield is less than 75% of potential.</p> <p>Target: Crops that meet at least 75% of target yields for client's soil.</p> <p>RANGE</p> <p>Indicator: Desired species are adapted to the site. Plant species of concern are not negatively impacted.</p> <p>Target: Seeded &/or transplanted plants listed as adapted in Ecological Site Description and practice standard 550 – Range Planting</p> <p>PASTURE</p> <p>Indicator: Client interviews and/or field observation and Pasture Condition score for Site</p> <p>Target Value: Site Adaptation of Desired Species indicator value of 4 or higher.</p>	<ul style="list-style-type: none"> • On-site investigation and records • Client interview • PLANTS database • VEGSPEC • Seeding and Planting Guide • Plant hardiness zone map • Soil pH, drainage class, sodium adsorption ratio (SAR) and electrical conductivity (EC) suitability ranges. • Soil interpretations – Section IV • Local agronomy guides • University Extension Service information • Soil survey manuscripts • Ecological Site Descriptions (ESD) • Practice Standard 550 – Range Planting http://www.nm.nrcs.usda.gov/technical/afotg/section-4/std-specs.html • Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and • Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. • National Range & Pasture Handbook. http://policy.nrcs.usda.gov/scripts/lps/iis.dll/H/H_190_NRPB_Content.htm • Conservation Tree and Shrub Groups (CTSG) • Silvics of North America Trees • NRCS Discipline Manuals/handbooks

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
Plant – Condition – Productivity, Health and Vigor	Plants do not produce the yields, quality, and soil cover to meet client objectives.	<p>Selected plants on or planned for the site are sufficiently productive to meet or exceed client needs. For specific land uses, additional criteria apply:</p> <p>Cropland: A healthy stand with vigorous growth produces at least 75% of site potential.</p> <p>Rangeland: The plant community has a similarity index of at least 60% or an upward trend for similarity indices less than 60%.</p> <p>Pastureland: Forage yields are at least 75% of high management estimates cited in FSG reports.</p> <p>Hayland: Forage yields at least 75% of high mgt. estimates cited in Forage Suitability Groups (FSG) reports</p> <p>Forestland/Agroforest: Forests consist of healthy stands with vigorous growth having a stand density within 25% of optimum stocking on a stems/acre basis. Plants chosen for agroforest applications are consistent with Conservation Tree and Shrub Groups (CTSG) listings and height performance.</p>	Non Measurable	<p><u>CROP – HAY - PASTURE PRODUCTIVITY</u></p> <p>Indicator: Client interview and/or field observation.</p> <p>Target: Crop yield and quality meets the client's goals. Production levels are 75% or more of the client's yield goals</p> <p><u>CROP – HAY - PASTURE HEALTH & VIGOR</u></p> <p>Indicator: Client interview and/or field observations.</p> <p>Target: Crop under current management shows no signs of insect damage (greater than economic thresholds), disease (greater than economic thresholds), poor plant nutrition, drought stress and/or weeds (greater than economic thresholds).</p> <p><u>RANGE</u></p> <p>Indicator: Similarity Index and rangeland trend.</p> <p>Target: The plant community has a similarity index of at least 60% or an upward trend for similarity indices less than 60%.</p> <p><u>PASTURE</u></p> <p>Indicator: Pasture Condition score for percent desirable plants, plant cover and vigor.</p> <p>Target Value: Individual percent desirable plants, plant cover and vigor indicator values of 4 or higher.</p>	<ul style="list-style-type: none"> • Local agronomy guides • Client interview • Plant tissue and harvest analysis • Crop scouting • NRCS discipline manuals/handbooks • National Range and Pasture Handbook http://policy.nrcs.usda.gov/scripts/lpsiiis.d/II/H/H_190_NRPB_Content.htm • Ecological Site Descriptions • Rangeland Similarity Index Worksheet • Rangeland Trend Worksheet • Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and • Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf. • Rising plate meter • Electronic probe calibrated for the forage mixture, or a clip and weigh sampling procedure. • Plot sampling of understory vegetation • Soil survey reports • Soil Testing • Crop/soil yield comparison in the vicinity • Keys for disease and insect symptoms • Keys for nutrient deficiencies, toxicities, and other conditions • Plot sampling of understory vegetation <p>Stocking measurement for the tree stands</p> <ul style="list-style-type: none"> • Conservation Tree and Shrub Groups (CTSG)

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
<p>Plant Condition - Threatened or Endangered Plant Species: Plant Species Listed or Proposed for Listing under the Endangered Species Act</p>	<p>The site includes individuals, habitat or potential habitat for one or more plant species listed or proposed for listing under the Endangered Species Act.</p>	<p>Populations and/or habitats of Threatened or Endangered plant species are managed to maintain, increase, or improve current populations, health, or sustainability.</p>	<p>Non Measurable</p>	<p><u>ALL LAND USES:</u></p> <p>Indicator: If County Endangered and Threatened species lists and Bison-m habitat information indicates potential presence of endangered species - Plants, then use client interview and /or field observation to determine presence on site.</p> <p>Target: A “no effect” as determined by the NRCS Environmental Evaluation, Endangered Species Special Environmental Concerns; or a “may effect, but not likely to adversely affect” determination which is concurred in by the US Fish and Wildlife Service.</p>	<ul style="list-style-type: none"> • Client interviews • Inventory site • General Manual, 190, Part 410 • US Fish and Wildlife Service county endangered species lists • Federal and state endangered species rules and regulations • Consultation with appropriate federal, state, and local agencies/groups • PLANTS Website <p><u>TOOLS:</u> http://ifwzes.fws.gov/EndangeredSpecies/Lists/default.cfm</p> <p>Biological Information Service of New Mexico (BISON-M), New Mexico Department of Game and Fish. http://nmnhp.unm.edu</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
<p>Plant Condition – Threatened or Endangered Plant Species: Declining Species, Species of Concern</p>	<p>The site includes individuals, habitat, or potential habitat for one or more plant species that the State or Tribal government with jurisdiction, or the State Technical Committee, has identified as a species of concern. This includes plant species that have been identified as candidates for listing under the Endangered Species Act.</p>	<p>Populations and/or habitats of plant species of concern are managed to maintain, increase, or improve current populations, health, or sustainability.</p>	<p>Non measurable</p>	<p><u>ALL LAND USES:</u></p> <p>Indicator: If County Endangered and Threatened species lists and Bison-m habitat information indicates potential presence of endangered species - Plants, then use client interview and /or field observation to determine presence on site.</p> <p>Target: A “no effect” as determined by the NRCS Environmental Evaluation, Endangered Species Special Environmental Concerns; or a “may effect, but not likely to adversely affect” determination which is concurred in by the US Fish and Wildlife Service.</p>	<ul style="list-style-type: none"> • Client interviews • Inventory site • General Manual, 190, Part 410 • US Fish and Wildlife Service county endangered species lists • Federal and state endangered species rules and regulations • Consultation with appropriate federal, state, and local agencies/groups • PLANTS Website <p><u>TOOLS:</u> http://ifwzes.fws.gov/EndangeredSpecies/Lists/default.cfm Biological Information Service of New Mexico (BISON-M), New Mexico Department of Game and Fish. http://nmnhp.unm.edu</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
Plant Condition - Noxious and Invasive Plants	The site has noxious or invasive plants present.	The site is managed to control noxious and invasive plants and to minimize their spread.	Non Measurable	<p><u>CROPLAND –FOREST - HEADQUARTERS</u> Indicator: Client interview and field observation indicate the presents of a state listed class B or C weed.</p> <p>Target: Some treatment method recommended by the NMSU will be used to control and minimize their spread. Class A weeds will require treatment to minimize the spread.</p> <p><u>RANGE</u> Indicator: Biotic Integrity departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none too slight and slight to moderate for Biotic Integrity.</p> <p><u>PASTURE</u> Indicator: Client interviews and/or field observation and Pasture Condition score for Site Target Value: Percent Desirable Plants indicator value of 4 or higher.</p>	<ul style="list-style-type: none"> • Client interviews • Inventory site • Consult weed management associations • Consultation with appropriate federal, state, and local agencies/groups • State or local noxious weed list • PLANTS Website • National Range and Pasture Handbook Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet Ecological Site Descriptions http://policy.nrcs.usda.gov/scripts/lpsiis.d/ll/H/H_190_NRPB_Content.htm • Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and • Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf.

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Plants					
Plant Condition - Forage Quality and Palatability	Plants do not have adequate nutritive value or palatability for the intended use	Forage plants are managed to produce the desired nutritive value and palatability for the intended use.	Non Measurable	<p><u>HAYLAND - CROPLAND</u> Indicator: Client interview and forage testing indicates that the nutrient value is inadequate for use. Target: Forage test value that meet the nutrient value needed for sale or use on the operation.</p> <p><u>RANGE</u> Indicator: Biotic Integrity departure from Ecological Site Description or reference area. Target: Area evaluated shows a preponderance of evidence that fits between none too slight and slight to moderate for Biotic Integrity.</p> <p><u>PASTURE</u> Indicator: Client interviews and/or field observation and Pasture Condition score for Site Target Value: Site Adaptation of Desired Species, plant vigor, soil fertility, climatic stress indicator value of 4 or higher.</p>	<ul style="list-style-type: none"> • NIRS Forage Quality Analysis (NUTBAL) • Plant tissue analysis • National Range and Pasture Handbook Interpreting Indicators of Rangeland Health, Rangeland Health Evaluation Summary Worksheet http://policy.nrcs.usda.gov/scripts/lpsiis.d/ll/H/H_190_NRPB_Content.htm • Ecological Site Descriptions • Pasture Condition Scoring Guide ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-guide.pdf and • Pasture Condition Score Sheet ftp://ftp-fc.sc.egov.usda.gov/GLTI/technical/publications/pasture-score-sheet.pdf.
Plant Condition – Wildfire Hazard	The kinds and amounts of fuel loadings (plant biomass) pose risks to human safety, structures, and resources should wildfire occur.	Fuel loadings are reduced and/or isolated to meet client needs in minimizing the risk and incidence of wildfire.	Acres/Year - average annual acres protected from wildfire for the field of planning area/unit	<p><u>RANGE – FOREST:</u> Indicator: Client interviews and/or field observations of excessive fuel loads that pose risk to human safety, structures, and resources. Target Value: Fuel loads reduced, isolated and/or continuity broken in such a manner as to minimize risk to human safety, structures, and resources</p>	<ul style="list-style-type: none"> • Visual assessment protocols • Site and flammable biomass inventories • Aerial photo analysis • National Range and Pasture Handbook • Ecological Site Descriptions • FOTG Standards and Specification for Firebreak 394, Brush Management 314, Prescribed Burning 338, Forest Stand Improvement 666 and Prescribed Grazing 528a

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife - Inadequate Food	The quantity and quality of food are unavailable to meet the life history requirements of the species or guild of species of concern	Food availability meets the life history requirements of the species or guild of species of concern.	Non Measurable based on habitat evaluation guide	<p><u>THE FOLLOWING STATEMENT IS A GENERAL CRITERIA FOR ALL LAND USES:</u> In the case that a big game (ungulates: deer, elk, antelope, etc) population/resource balance problem exists that is beyond the control of the landowner/operator, and wildlife numbers are having an adverse impact on crops or soil resources, and the farm management is not contributing to the problem, the requirement for an RMS may be met even though the resource criteria indicated by the WHEG has not been met.</p> <p><u>CROP</u> Indicator: The minimum resource level of wildlife habitat on cropland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target: The target level for cropland is 0.5 for the species of concern</p> <p><u>HAYLAND & PASTURE</u> Indicator: The minimum resource level of wildlife habitat on hayland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target: The target level for hayland is 0.5 for the species of concern</p> <p><u>RANGE - FOREST</u> Indicator: The optimum resource level of wildlife habitat relative to its potential, for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target: Target score for species of concerns is 0.5</p>	<ul style="list-style-type: none"> • Visual assessment • Inventory of food species • Aerial photo analysis • State Adapted Wildlife Habitat Evaluation Guide • National Biology Handbook • General Criteria <p><u>NM TOOLS:</u> The Wildlife Habitat Evaluation Guides (WHEG) are used to evaluate the current level of habitat, and can be used to plan the needed level to reach a RMS. The WHEGs are located at: http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife – Inadequate Cover/Shelter	Cover/shelter for the species or guild of species concern is unavailable or inadequate. This includes lack of hiding, thermal, and/or refuge cover	The ecosystem or habit types support the necessary plant species in the kinds, amounts, and physical structure; and the connectivity of fish and wildlife cover is adequate to support, over time, the species of concern.	Non Measurable based on habitat evaluation guide	<p><u>THE FOLLOWING STATEMENT IS A GENERAL CRITERIA FOR ALL LAND USES:</u> In the case that a big game (ungulates: deer, elk, antelope, etc) population/resource balance problem exists that is beyond the control of the landowner/operator, and wildlife numbers are having an adverse impact on crops or soil resources, and the farm management is not contributing to the problem, the requirement for an RMS may be met even though the resource criteria indicated by the WHEG has not been met.</p> <p><u>CROP</u> Indicator: The minimum resource level of wildlife habitat on cropland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for cropland is 0.5 for the species of concern.</p> <p><u>HAYLAND & PASTURE</u> Indicator: The minimum resource level of wildlife habitat on hayland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for hayland is 0.5 for the species of concern.</p> <p><u>RANGE - FOREST</u> Indicator: The optimum resource level of wildlife habitat relative to potential, for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target: Target score for species of concerns is 0.50</p>	<ul style="list-style-type: none"> • Visual assessment • Inventory of cover/shelter • Aerial photo analysis • State Adapted Wildlife Habitat Evaluation Guide • National Biology Handbook <p><u>NM TOOLS:</u> The Wildlife Habitat Evaluation Guides (WHEG) are used to evaluate the current level of habitat, and can be used to plan the needed level to reach a RMS. The WHEGs are located at: http://www.nm.nrcs.usda.gov/technical/fotg/section-2/whegs.html</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife – Inadequate Water	The quantity and quality of water is unacceptable for the species or the guild of species of concern.	The quantity and quality of water meets the life history requirements of the species of concern.	Non Measurable based on habitat evaluation guide	<p><u>THE FOLLOWING STATEMENT IS A GENERAL CRITERIA FOR ALL LAND USES:</u> In the case that a big game (ungulates: deer, elk, antelope, etc) population/resource balance problem exists that is beyond the control of the landowner/operator, and wildlife numbers are having an adverse impact on crops or soil resources, and the farm management is not contributing to the problem, the requirement for an RMS may be met even though the resource criteria indicated by the WHEG has not been met.</p> <p><u>CROP</u> Indicator: The minimum resource level of wildlife habitat on cropland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for cropland is 0.5 for the species of concern.</p> <p><u>HAYLAND & PASTURE</u> Indicator: The minimum resource level of wildlife habitat on hayland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for hayland is 0.50 for the species of concern. .</p> <p><u>RANGE - FOREST</u> Indicator: The optimum resource level of wildlife habitat relative to its potential, for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target: Target score for species of concerns is 0.50</p>	<ul style="list-style-type: none"> • Surface water dissolved oxygen sampling and assay • Stream Visual Assessment Protocol • Habitat Suitability Index - model for target species • Inventory of water supplies • Aerial photo analysis • State Adapted Wildlife Habitat Evaluation Guide • National Biology Handbook <p><u>NM TOOLS:</u> The Wildlife Habitat Evaluation Guides (WHEG) are used to evaluate the current level of habitat, and can be used to plan the needed level to reach a RMS. The WHEGs are located at: http://www.nm.nrcs.usda.gov/technical/fotg/section-2/whegs.html</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife – Inadequate Space	Lack of required areas disrupts the life history of the species or guild of species of concern	Area is adequate to meet life history requirements of the species or guild of species of concern. (Examples: staging areas for rest and feeding, lek sites for breeding, migratory movement corridors)	Non Measurable based on habitat evaluation guide	<p><u>THE FOLLOWING STATEMENT IS A GENERAL CRITERIA FOR ALL LAND USES:</u> In the case that a big game (ungulates: deer, elk, antelope, etc) population/resource balance problem exists that is beyond the control of the landowner/operator, and wildlife numbers are having an adverse impact on crops or soil resources, and the farm management is not contributing to the problem, the requirement for an RMS may be met even though the resource criteria indicated by the WHEG has not been met.</p> <p><u>CROP</u> Indicator: The minimum resource level of wildlife habitat on cropland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for cropland is 0.5 for the species of concern.</p> <p><u>HAYLAND & PASTURE</u> Indicator: The minimum resource level of wildlife habitat on hayland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for hayland is 0.5 for the species of concern.</p> <p><u>RANGE - FOREST</u> Indicator: Site visit and client interview. Utilization in the field. Target: Numbers in balance with land capacity.</p>	<ul style="list-style-type: none"> • Visual assessment • Stream Visual Assessment Protocol • Inventory of space/areas • Aerial photo analysis • State Adapted Wildlife Habitat Evaluation Guide • National Biology Handbook <p><u>NM TOOLS:</u> The Wildlife Habitat Evaluation Guides (WHEG) is used to evaluate the current level of habitat, and can be used to plan the needed level to reach a RMS. The WHEGs are located at: http://www.nm.nrcs.usda.gov/technical/fotg/section-2/whogs.html</p> <p><u>RANGE TOOLS:</u> Practice 528a Prescribed Grazing standard criteria are met http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html. National Range and Pasture Handbook See FOTG section I, "Utilization studies and Residual measurements".</p>

National and State Resource Concerns and Quality Criteria

Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
<p>Fish and Wildlife Habitat Fragmentation</p>	<p>Habitat has insufficient structure, extent, and connectivity to provide ecological functions and/or achieve management objectives.</p>	<p>Fish and wildlife habitats are connected and are maintained sufficiently to support the species or guild of species of concern.</p>	<p>Non Measurable based on habitat evaluation guide</p>	<p><u>ALL LAND USES</u></p> <p>Indicator: Observation, either on site or with recent aerial photography. Target: Habitat connectivity sufficiently established and maintained to support the species or guild of species of concern.</p>	<ul style="list-style-type: none"> • Stream Visual Assessment Protocol • Aquatic and terrestrial habitat evaluation procedures • Wildlife Habitat Evaluation Guide (WHEG)

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife - Imbalance Among and Within Populations	Populations are not in proportion to available quantities and qualities of food (plants, predator/prey), cover/shelter, water, and space and other life history requirements.	Land and water use and management are consistent with direct population management activities conducted by fish and wildlife agencies.	Non Measurable based on habitat evaluation guide	<p><u>THE FOLLOWING STATEMENT IS A GENERAL CRITERIA FOR ALL LAND USES:</u> . In the case that a big game (ungulates: deer, elk, antelope, etc) population/resource balance problem exists that is beyond the control of the landowner/operator, and wildlife numbers are having an adverse impact on crops or soil resources, and the farm management is not contributing to the problem, the requirement for an RMS may be met even though the resource criteria indicated by the WHEG has not been met.</p> <p><u>CROP</u> Indicator: The minimum resource level of wildlife habitat on cropland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for cropland is 0.5 for the species of concern.</p> <p><u>HAYLAND & PASTURE</u> Indicator: The minimum resource level of wildlife habitat on hayland relative to its potential for the species of concern is rated using the Wildlife Habitat Evaluation Guide (WHEG). Target The target level for hayland is 0.5 for the species of concern.</p> <p><u>RANGE - FOREST</u> Indicator: Site visit and client interview. Utilization in the field. Target: Numbers in balance with land capacity.</p>	<ul style="list-style-type: none"> Fish and wildlife agency guidance and protocols <p><u>NM TOOLS:</u> The Wildlife Habitat Evaluation Guides (WHEG) are used to evaluate the current level of habitat, and can be used to plan the needed level to reach a RMS. The WHEGs are located at: http://www.nm.nrcs.usda.gov/technical/fotg/section-2/whegs.html</p> <p>Range Tools: Practice 528a Prescribed Grazing standard criteria are met http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html. National Range and Pasture Handbook See FOTG section I, "Utilization studies and Residual measurements".</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
<p>Fish and Wildlife - Threatened and Endangered Species: Fish and Wildlife Species Listed or Proposed for Listing under the Endangered Species Act</p>	<p>Fish and wildlife populations and/or habitat quantity and quality have reached a level that one or more species are in danger of or threatened with extinction.</p>	<p>Threatened and endangered fish and wildlife species and/or habitats they occupy are managed to avoid actions that would reduce their current population, health, or sustainability.</p>	<p>Non Measurable</p>	<p><u>CROP - HAYLAND – PASTURE</u></p> <p>Indicator: Client interview and/or field observation. Species Listings.</p> <p>Target: Threatened and endangered plant and animals, listed in section II of FOTG, are managed to avoid actions that would reduce their population numbers, health or habitat quality</p> <p><u>RANGE – FOREST</u></p> <p>Indicator: County Endangered and Threatened species lists and Bison-m habitat information.</p> <p>Target : A “no effect” as determined by the NRCS Environmental Evaluation, Endangered Species Special Environmental Concerns; or a “may effect, but not likely to adversely affect” determination which is concurred in by the US Fish and Wildlife Service.</p>	<ul style="list-style-type: none"> • Client interviews • Inventory of presence/absence of T&E species • General Manual, 190, Part 410 • US Fish and Wildlife Service county endangered species lists • Fish and wildlife recovery plans • Federal and state endangered species rules and regulations • Consultation with appropriate federal, state, and local agencies/groups • Fish and wildlife agency web sites <p><u>NM TOOLS:</u> See NRCS General Manual 190, Part 410. US Fish and Wildlife Service county endangered Species lists at http://ifw2es.fws.gov/EndangeredSpecies/Lists/ListSpecies. Biological Information Service of New Mexico (BISON-M), at http://nrmhp.unm.edu/bisonm/bisonquery.php.</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Fish and Wildlife – Threatened and Endangered Species: Declining Species, Species of Concern	The site includes individuals, habitat or potential habitat for one or more fish and wildlife species that the State or Tribal government with jurisdiction, or the State Technical Committee, has identified as a species of concern. This includes fish and wildlife species that have been identified as candidates for listing under the Endangered Species Act.	Populations and/or habitats of fish and wildlife species of concern are managed to maintain, increase, or improve current populations, health, or sustainability.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE</u></p> <p>Indicator: Client interview and/or field observation. Species Listings.</p> <p>Target: Threatened and endangered plant and animals, listed in section II of FOTG, are managed to avoid actions that would reduce their population numbers, health or habitat quality</p> <p><u>RANGE – FOREST</u></p> <p>Indicator: County Endangered and Threatened species lists and Bison-m habitat information.</p> <p>Target : A “no effect” as determined by the NRCS Environmental Evaluation, Endangered Species Special Environmental Concerns; or a “may effect, but not likely to adversely affect” determination which is concurred in by the US Fish and Wildlife Service.</p>	<ul style="list-style-type: none"> • Client interviews • Inventory of presence/absence of T&E species • General Manual, 190, Part 410 • US Fish and Wildlife Service county endangered species lists • Fish and wildlife recovery plans • Federal and state endangered species rules and regulations • Consultation with appropriate federal, state, and local agencies/groups • Fish and wildlife agency web sites <p>NM TOOLS: See NRCS General Manual 190, Part 410. US Fish and Wildlife Service county endangered Species lists at http://ifw2es.fws.gov/EndangeredSpecies/Lists/ListSpecies. Biological Information Service of New Mexico (BISON-M), at http://nmnhp.unm.edu/bisonm/bisonquery.php.</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Domestic Animals – Inadequate Quantities and Quality of Feed and Forage	Total feed and forage is insufficient to meet the nutritional and production needs of the kinds and classes of livestock	Feed and forage including supplemental nutritional requirements are provided to meet production goals for the kinds and classes of livestock. Native grazers are factored into the total feed and forage balance computations.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE-RANGE – HEADQUARTERS</u></p> <p>Indicator: If client interview and/or field observation indicates a problem, then use Body Condition Score (BCS).</p> <p>Target: Feed and forage quantity and quality in balance with livestock numbers. Client should set BCS targets based on their willingness to assume risk. A BCS between 4 and 6 target for cows at calving.</p>	<ul style="list-style-type: none"> • Measured inventory • National Range and Pasture Handbook • Grazing Lands Application (GSAT) software • NIRS/Nutritional Balance Profile Program (NUTBAL Pro) <p>http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm</p> <ul style="list-style-type: none"> • Forage quality laboratory analysis Prescribed Grazing 528a(3) Livestock, Forage, and Feed Worksheet <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p> <p>NMSU Circular 575 Managing and Feeding Beef Cows Using Body Condition Scores</p> <p>http://policy.nrcs.usda.gov/scripts/lpsiis.dll/H/H_190_NRPB_Content.htm</p> <p>http://www.nm.nrcs.usda.gov/technical/std-specs.html</p> <p>http://cahe.nmsu.edu/pubs/_b/</p>
Domestic Animals – Inadequate Shelter	Livestock are not protected sufficiently to meet the production goals for the kinds and classes of livestock	Artificial and/or natural shelter is provided to meet production goals for the kinds and classes of livestock.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE-RANGE – HEADQUARTERS</u></p> <p>Indicator: Client interview and/or field observation.</p> <p>Target: Protective shelter and/or shade is provided to ensure the health and general well being of the animal resource is in keeping with producer production goals.</p>	<ul style="list-style-type: none"> • Visual assessment • Inventory of facilities and their capacities • Aerial photo analysis • National Range and Pasture Handbook Section IV of FOTG, Windbreak/Shelterbelt Establishment and/or Renovation. Prescribed Grazing standard criteria are met <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	State Quality Criteria	Assessment Tools for Quality Criteria Evaluation
Animal					
Domestic Animals – Inadequate Stock Water	The quantity, quality and distribution of drinking water is insufficient to meet the production goals for the kinds and classes of livestock	Sufficient water of acceptable quality is provided and adequately distributed to meet production goals for the kinds and classes of livestock. To reduce potential for water contamination, watering facilities are constructed or modified to minimize mortality to indigenous wildlife.	Non Measurable	<p><u>CROP - HAYLAND – PASTURE – RANGE – HEADQUARTERS</u></p> <p>Indicator: If client interview and/or field observations indicates a problem, then use NRPH Water quality & quantity standards for livestock.</p> <p>Target: Watering facility size and fill rate meet anticipated animal demand at any moment in time. Quality is within the limits set by NRPH Table 6-8. Drinking water availability and quality will meet the water requirement needed by the type and class of livestock to meet producer’s production goals.</p>	<ul style="list-style-type: none"> • Visual assessment • Inventory of distribution needs • Aerial photo analysis • National Range and Pasture Handbook National Range & Pasture Handbook, Figure 6-5 Water requirements of European & Indian cattle as affected by temp, Table 6-7 Expected water consumption of various species of adult livestock in a temperate climate, & 6-8 Water quality standards for livestock. Prescribed Grazing 528a(3) Livestock, Forage, and Feed Worksheet (Water Budget) <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html</p>
Domestic Animals - Stress and Mortality	Animals exhibit illness or death from disease, parasites, insects, poisonous plants, or other factors	Land and water use and management are consistent with activities conducted to alleviate stress and mortality factors.	Non Measurable	<p><u>HAYLAND-PASTURE – RANGE – HEADQUARTERS</u></p> <p>Indicator: Visual observation, Site visit and client interview.</p> <p>Target: Domesticated animals are in good overall health. Diseases, parasites, and pests are actively controlled</p>	<ul style="list-style-type: none"> • Animal health/mortality alerts • State and local biosecurity protocols • State and local standards for animal disposal <p>Site visit and client interview. Consultation with county extension agent.</p> <p>http://cahe.nmsu.edu/pubs/_b/. FOTG-Prescribed Grazing Standards & Specifications</p> <p>http://www.nm.nrcs.usda.gov/technical/fotg/section-4/std-specs.html, National Range and Pasture Handbook, Chapter 6.</p>
Water Quality – Colorado River Excessive Salinity				<u>NA FOR NM</u>	