

National and State Resource Concerns and Quality Criteria					
Natural Resource Concern	Description of Concern	National Quality Criteria	Measurement Units	Missouri Quality Criteria	Assessment Tools for Quality Criteria Evaluation
<b>ANIMALS</b>					
<i>Fish and Wildlife</i> <b>Inadequate Food</b>	Quantity and quality of food is 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.	Habitat suitability index (HIS)	Food availability meets the life history requirements of the species or guild of species of concern. Field or farm habitat value of 0.5 or greater for the appropriate MO Wildlife Habitat Appraisal Guide (WHAG) Species or Community Model is developed or maintained.	<ul style="list-style-type: none"> <li>• Visual assessment</li> <li>• Inventory of food species</li> <li>• Aerial photo analysis</li> <li>• MO Wildlife Habitat Appraisal Guide (WHAG) Community Model</li> <li>• National Biology Handbook</li> </ul>
<i>Fish and Wildlife</i> <b>Inadequate Cover/Shelter</b>	Cover/shelter for the species of concern is unavailable or inadequate. For aquatic species, 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.	Habitat suitability index (HIS)	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. Field or farm habitat value of 0.5 or greater for the appropriate MO Wildlife Habitat Appraisal Guide (WHAG) Species or Community Model is developed or maintained.	<ul style="list-style-type: none"> <li>• Visual assessment</li> <li>• Inventory of cover/shelter</li> <li>• Aerial photo analysis</li> <li>• MO Wildlife Habitat Appraisal Guide (WHAG) Community Model</li> <li>• National Biology Handbook</li> </ul>

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<i>Fish and Wildlife</i> <b>Inadequate Water</b>	The quantity and quality of water is unacceptable for the species of concern	The quantity and quality of water meets the life history requirements of the species of concern.	Non Measurable	Same as National	<ul style="list-style-type: none"> <li>• Stream Visual Assessment Protocol</li> <li>• Inventory of water supplies</li> <li>• Aerial photo analysis</li> <li>• MO Wildlife Habitat Appraisal Guides (WHAG)</li> <li>• National Biology Handbook</li> </ul>
<i>Fish and Wildlife</i> <b>Inadequate Space</b>	Lack of area and fragmentation of areas disrupt life history requirements of the species of concern	Adequate area and connectivity of areas meet life history requirements of the species of concern. (Examples: staging areas for rest and feeding, lekking areas for breeding, migratory movement corridors)	Non Measurable	Same as National	<ul style="list-style-type: none"> <li>• Visual assessment</li> <li>• Stream Visual Assessment Protocol</li> <li>• Inventory of space/areas</li> <li>• Aerial photo analysis</li> <li>• MO Wildlife Habitat Appraisal Guides (WHAG)</li> <li>• National Biology Handbook</li> </ul>
<i>Fish and Wildlife</i> <b>Plant Community Fragmentation</b>	Natural plant communities have insufficient structure, extent, and connectivity to provide ecological functions and/or achieve management objectives.	Fish and wildlife habitat functions of connected plant communities are maintained sufficiently to support the species or guild of species of concern	Non Measurable	Same as National	<ul style="list-style-type: none"> <li>• Stream Visual Assessment Protocol</li> <li>• Aquatic and terrestrial habitat evaluation procedures</li> <li>• MO Wildlife Habitat Appraisal Guides (WHAG)</li> </ul>

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<i>Fish and Wildlife</i> <b>Imbalance Among and Within Populations</b>	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.	Habitat suitability index (HIS)	Land and water use and management are consistent with direct population management activities conducted by fish and wildlife agencies. Field or farm habitat value of 0.5 or greater for the appropriate MO Wildlife Habitat Appraisal Guide (WHAG) Species or Community Model is developed or maintained.	<ul style="list-style-type: none"> <li>• State fish and wildlife agency guidance and protocols</li> <li>• MO Wildlife Habitat Appraisal Guide (WHAG) Community Model</li> </ul>
<i>Fish and Wildlife</i> <b>Threatened and Endangered Species</b>	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.	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.	Non Measurable	Same as National	<ul style="list-style-type: none"> <li>• Client interviews</li> <li>• Inventory site</li> <li>• General Manual, 190, Part 410</li> <li>• Missouri T&amp;E Impact Matrix</li> <li>• Federal and state endangered species rules and regulations</li> <li>• Missouri Natural Heritage Database</li> </ul>

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<p><i>Domestic Animals</i></p> <p><b>Inadequate Quantities and Quality of Feed and Forage</b></p>	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	Same as National	<ul style="list-style-type: none"> <li>• Measured inventory</li> <li>• National Range and Pasture Handbook</li> <li>• Grazing Lands Application (GLA) software</li> <li>• Nutritional Balance Program (NUTBAL)</li> <li>• NIRS/Nutritional Balance Profile Program (NUTBAL Pro)</li> <li>• Forage quality laboratory analysis</li> <li>• Graze 4</li> <li>• MO-JS-AGRON-26/27</li> </ul>
<p><i>Domestic Animals</i></p> <p><b>Inadequate Shelter</b></p>	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	Artificial and/or natural shelter is provided to meet production goals for the kinds and classes of livestock. Body weight and reproductive potential are maintained during critical climatic periods.	<ul style="list-style-type: none"> <li>• Visual assessment</li> <li>• Inventory of facilities and their capacities</li> <li>• Aerial photo analysis</li> <li>• National Range and Pasture Handbook</li> </ul>

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<i>Domestic Animals</i>  <b>Inadequate Stock Water</b>	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	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. Storage and delivery water rates are sufficient to meet use demand within one hour. Water supplies are managed to insure suitable quality and distribution.	<ul style="list-style-type: none"> <li>• Visual assessment</li> <li>• Inventory of distribution needs</li> <li>• Aerial photo analysis</li> <li>• National Range and Pasture Handbook</li> </ul>
<i>Domestic Animals</i>  <b>Stress and Mortality</b>	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	Same as National	<ul style="list-style-type: none"> <li>• Animal health/mortality alerts</li> <li>• State and local biosecurity protocols</li> <li>• State and local standards for animal disposal</li> </ul>