

**RESOURCE CONCERNS & PLANNING CRITERIA FOR CONSERVATION PLANNING**  
**Screening and Assessment**  
**10/1/2012**

<b>Resource Concern - Cause</b>	<b>Description of Concern</b>	<b>Land Use</b>	<b>Planning Criteria</b>		<b>Measurement &amp; Assessment Tools</b>
<p>A resource concern (RC) is an expected degradation of the soil, water, air, plant, or animal resource base to an extent that the sustainability or intended use of the resource is impaired. Because NRCS quantifies or describes resource concerns as part of a comprehensive conservation planning process that includes client objectives, human and energy resources are considered components of the resource base.</p> <p>The “Cause” is the specific reason or threat to the resource that results in the resource concern.</p>		<p>* Denotes Required Assessment</p> <p><b>Land Use Note</b>            Modifiers may be used to further describe how a land unit is managed.            Modifiers include:            - Wildlife,            - Grazed, and            - Irrigated</p> <p>Land uses that are managed for wildlife, grazed, or irrigated should be evaluated through the primary land use</p>	<p>A planning criterion is a quantitative or qualitative method to assess the existing condition of the natural resources on a site to determine whether additional treatment is needed to address a specific potential resource concern.</p> <p style="text-align: center;"><b>Planning Consideration</b></p> <p>A planning consideration is a description of potential actions or activities that should be considered to help address an identified resource concern and/or to address unintended consequences of an action. Planning considerations are identified for resource concerns when it is not appropriate or technologically feasible to identify specific criteria or a threshold for treatment.</p>		<p>Description of the technology or process for determining if assessment criteria are met.</p>
			<b>Screening Level</b>	<b>Basic Assessment Level</b>	
			<p>Screening level criteria are defined, when appropriate, to identify sites with conditions that have little or no probability of needing additional treatment to address the specific resource concern. If the site meets the screening level criteria, then no other assessment is needed to document that planning criteria are met on this site.</p>	<p>Basic assessment level criteria are used when a site does not meet screening level criteria, or when no screening level criteria are defined.</p>	

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**SOIL**

<b>- 1 - SOIL EROSION - Sheet, rill, &amp; wind erosion</b>	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	<ul style="list-style-type: none"> <li>Crop*</li> </ul>	Permanent ground cover > 90% and slope < 10% for the planning soil map unit  Annual crop production with >30% residue after planting all crops in the rotation and slope < 2% for the planning soil map unit	Water erosion rate ≤ T  <b>AND</b>  Wind erosion rate ≤ T	RUSLE2  WEPS
		<ul style="list-style-type: none"> <li>Pasture*</li> </ul>	Permanent ground cover > 90% and slope < 10%	Water erosion rate ≤ T  <b>OR</b>  Pasture Condition Score - Soil Erosion element score ≥ 4	RUSLE2  PCS - Pasture Condition Score
		<ul style="list-style-type: none"> <li>Developed Land*</li> <li>Farmsteads*</li> <li>Associated Ag Land*</li> <li>Designated Protected Area*</li> <li>Other Rural Land*</li> </ul>	Permanent ground cover > 90% and slope < 10%	Water erosion rate ≤ T  <b>AND</b>  Wind erosion rate ≤ T	RUSLE2  WEPS
		<ul style="list-style-type: none"> <li>Forest*</li> </ul>	Soil surface organic residue cover > 80%	Site is stable and without visible signs of active erosion	Visual Inspection

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- 2 – <b>SOIL EROSION – Concentrated flow erosion</b>	Untreated classic gullies may enlarge progressively by head cutting and/or lateral widening. Ephemeral gullies occur in the same flow area and are obscured by tillage. This includes concentrated flow erosion caused by runoff from rainfall, snowmelt or irrigation water.	• Crop*	Ephemeral gullies are not occurring <b>AND</b> Classic gullies are not present	Conservation practices and managements are in place to prevent or control ephemeral gullies <b>AND</b> Classic gully management is adequate to stop the progression of head cutting and widening and offsite impacts are minimized by vegetation and/or structures	Field measurements / observations
		• Forest* • Farmsteads* • Pasture* • Developed Land* • Associated Ag Land* Designated Protected Area* • Other Rural Land*	Classic gullies are not present	Classic gully management is adequate to stop the progression of head cutting and widening and offsite impacts are minimized by vegetation and/or structures	
- 3 – <b>SOIL EROSION– Excessive bank erosion from streams shorelines or water conveyance channels</b>	Sediment from banks or shorelines threatens to degrade water quality and limit use for intended purposes	• Crop* • Forest • Developed Land* • Associated Ag Land* Designated Protected Area* • Water* • Other Rural Land* • Farmsteads*	No streams or shoreline are on or adjacent to site <b>OR</b> No bank erosion from streams, shorelines or conveyance channels present	For shorelines and water conveyance channels; Banks are stable or commensurate with normal geomorphological processes <b>AND</b> For streambanks; SVAP2 bank condition element score $\geq 5$ <b>OR</b> If present, bank erosion is caused by upstream land use and beyond the client’s control	Visual assessment, e.g. SVAP2
		• Pasture*	No streams or shoreline are on or adjacent to site <b>OR</b> No bank erosion from streams, shorelines or conveyance channels present	Streambanks are grazed but stable. Mix of pasture plants and native water’s edge species present. Muddy livestock stream crossing(s) or pond entrance(s) not used heavily. Alternative water sites present. (PCS - Streambank / shoreline erosion element score $\geq 4$ ) <b>AND</b> For shorelines and water conveyance channels; Banks stable or commensurate with normal (Cont.) geomorphological processes <b>AND</b> If present, bank erosion is caused by upstream land use and beyond the client’s control	Visual assessment, e.g. SVAP2  PCS - Pasture Condition Score

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- 4 – <b>SOIL QUALITY DEGRADATION - Subsidence</b>	Loss of volume and depth of organic soils due to oxidation caused by above normal microbial activity resulting from excessive water drainage, soil disturbance, or extended drought.  This resource concern excludes karst / sinkholes issues or depressions caused by underground activities.	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Forest</li> <li>• Associated Ag Land Designated Protected Area</li> <li>• Pasture</li> </ul>	Histosol soils are not present <b>OR</b> Histisols soils are not exhibiting subsidence	Subsidence is adequately managed to meet client's objectives	Client input / planner observation
- 5 – <b>SOIL QUALITY DEGRADATION – Compaction</b>	Management induced soil compaction resulting in decreased rooting depth that reduces plant growth, animal habitat and soil biological activity	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Forest</li> <li>• Associated Ag Land Designated Protected Area</li> <li>• Other Rural Land</li> </ul>	Soil compaction does not adversely affect plant-soil moisture relationships <b>AND</b> Activities do not cause soil compaction problems	Compaction is managed to meet Client's production and management objectives	Visual observation of soil and/or assessment of plant root systems  Client input / planner observation  Penetrometer
		<ul style="list-style-type: none"> <li>• Pasture</li> </ul>	Soil compaction does not adversely affect plant-soil moisture relationships <b>AND</b> Activities do not cause soil compaction problems	PCS – compaction element score $\geq 4$	PCS - Pasture Condition Score

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- 6 – <b>SOIL QUALITY DEGRADATION – Organic matter depletion</b>	Soil organic matter is not adequate to provide a suitable medium for plant growth, animal habitat, and soil biological activity	• Crop*	Permanent ground cover > 80%	SCI > 0	RUSLE2 WEPS Client input / planner Observation Soil health assessments
		• Pasture	Permanent ground cover > 80%	SCI > 0 <b>OR</b> PCS – Live Plant cover element score ≥ 4 <b>AND</b> PCS - plant residue element score ≥ 4	PCS - Pasture Condition Score  RUSLE2
		• Forest	Soil organic matter depletion is not a problem <b>AND</b> Activities do not cause soil organic matter depletion	Ground cover meets state criteria specific to ecological site <b>OR</b> Soil organic matter is managed to meet Client objectives	Client input / planner observation
- 7 – <b>SOIL QUALITY DEGRADATION – Concentration of salts or other chemicals</b>	Concentration of salts leading to salinity and/or sodicity reducing productivity or limiting desired use  Concentrations of other chemicals impacting productivity or limiting desired use	• Crop • Pasture • Associated Ag Land • Farmsteads	Activities do not cause salinity/sodicity problems	Conservation practices and managements are in place to mitigate on-site effects	Soil diagnostic evaluations such as Soils Test or Soil quality kit (EC Meter)

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## WATER

- 8 – <b>EXCESS WATER – Ponding, flooding, seasonal high water table, seeps, and drifted snow</b>	Surface water or poor subsurface drainage restricts land use and management goals. Wind-blown snow accumulates around and over surface structures, restricting access to humans and animals.	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Forest</li> <li>• Farmsteads</li> <li>• Pasture</li> <li>• Developed Land</li> <li>• Associated Ag Land</li> <li>• Designated Protected Area</li> <li>• Other Rural Land</li> </ul>	Excess water/snow is not a problem <b>AND</b> Activities do not cause ponding/flooding/drifted problems	Excess water/snow is managed to meet Client’s objectives and wetland policies	Client input / planner observation of items such as physical presence of water, prevalence of hydrophytic vegetation, hydrologic models, soil cores, plant quality and quantity observations, depth and area measurements
- 9 - <b>INSUFFICIENT WATER – Inefficient moisture management</b>	Natural precipitation is not optimally managed to support desired land use goals or ecological processes	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Developed Land</li> <li>• Forest</li> <li>• Associated Ag Land</li> <li>• Designated Protected Area</li> </ul>	Moisture management is not a problem <b>AND</b> Activities do not cause inefficient moisture management	Runoff and evapotranspiration levels are minimized to meet Client’s management objectives	Client input / planner observation of items such as plant quality and/or quantity observations
		<ul style="list-style-type: none"> <li>• Pasture</li> </ul>	Moisture Management is not a problem <b>AND</b> Activities do not cause inefficient moisture management	PCS – compaction element score $\geq 4$ <b>AND</b> PCS - plant cover element score $\geq 4$	PCS - Pasture Condition Score and/or plant or animal quality and quantity observations
- 10 - <b>INSUFFICIENT WATER – Inefficient use of irrigation water</b>	Irrigation water is not stored, delivered, scheduled and/or applied efficiently. Aquifer or surface water withdrawals threaten sustained availability of ground or surface water. Available irrigation water supplies have been reduced due to aquifer depletion, competition, regulation and/or drought	<ul style="list-style-type: none"> <li>• All*</li> </ul>	Planning Land Unit (PLU) is not irrigated	FIRI $\geq 85\%$ of system potential	FIRI – Farm Irrigation Rating Index

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<b>- 11 – WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters</b>	Nutrients (organic and inorganic) are transported to receiving waters through surface runoff and/or leaching into shallow ground waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>Crop*</li> </ul>	Organic or inorganic nutrients are not applied <b>AND</b> PLU is not grazed	Nutrient and amendment applications are based on soil or tissue tests and nutrient budgets for realistic yields <b>AND</b> Conservation practices and managements are in place to minimize offsite impacts	Client input / planner observation  Nutrient budget
		<ul style="list-style-type: none"> <li>Pasture*</li> </ul>		Streambanks are grazed but stable. Mix of pasture plants and native water's edge species present. Muddy livestock stream crossing(s) or pond entrance(s) not used heavily. Alternative water sites present. (PCS - Streambank / shoreline erosion element score $\geq 4$ ) <b>AND</b> PCS - Livestock concentration areas element score $\geq 4$ <b>AND</b> Nutrients are applied and based on a soil test, tissue tests or nutrient budget	PCS – Pasture Condition Score  Nutrient budget
		<ul style="list-style-type: none"> <li>Developed Land</li> </ul>	Organic or inorganic nutrients are not applied	Nutrients if applied, are based on a soil test, tissue tests or nutrient budget <b>AND</b> Conservation practices and managements are in place to minimize offsite impacts	
		<ul style="list-style-type: none"> <li>Farmsteads*</li> </ul>	Organic or inorganic nutrients are not applied <b>AND</b> PLU is not grazed <b>AND</b> There are no confined livestock areas	Conservation practices and managements are in place to minimize offsite impacts <b>AND</b> Surface and ground waters are protected from contamination due to runoff and leaching from storage sites, spill and other concentrated sources	Client input / planner observation

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- 12 – <b>WATER QUALITY DEGRADATION – Pesticides transported to surface and ground waters</b>	Pest control chemicals are transported to receiving waters in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>All</li> </ul>	Pest control chemicals are not applied	Pesticides are stored, handled, disposed and managed to prevent runoff, spills, leaks and leaching <b>AND</b> Application and use of pesticides is according to label instructions and University of Illinois Cooperative Extension recommendations. Federal, State, and local laws must be followed <b>AND</b> Conservation practices and managements are in place to minimize offsite impacts	Client input / planner observation  WinPST
- 13 – <b>WATER QUALITY DEGRADATION – Excess pathogens and chemicals from manure, bio-solids or compost applications</b>	Pathogens, pharmaceuticals, and other chemicals carried by land applied soil amendments are transported to receiving waters in quantities that degrade water quality and limit use for intended purposes.  This resource concern also includes the off-site transport of leachate and runoff from compost or other organic materials of animal origin.	<ul style="list-style-type: none"> <li>Crop*</li> <li>Farmsteads*</li> <li>Forest</li> <li>Developed Land</li> <li>Associated Ag Land</li> <li>Other Rural Land</li> <li>Designated Protected Area</li> <li>Water</li> <li>Pasture*</li> </ul>	Potential sources of pathogens or pharmaceuticals from soil amendments are not stored, handled, and/or applied on the land	Organic materials are applied, stored, and/or handled to mitigate negative impacts to water sources	Client input / planner observation  Surface water pathogen sampling and assay.  Vadose zone and groundwater chemical sampling and assay.
- 14 – <b>WATER QUALITY DEGRADATION – Excessive salts in surface and ground waters</b>	Irrigation or rainfall runoff transports salts to receiving water in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>All</li> </ul>	Salt concentrations is not a limiting factor	Salt concentrations are managed to mitigate off-site transport to surface or ground waters	Client input / planner observation  Vadose zone and groundwater salinity sampling (total dissolved solids, or electrical conductivity) and assay, soil salinity sampling and assay

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- 15 – <b>WATER QUALITY DEGRADATION – Petroleum, heavy metals and other pollutants transported to receiving waters</b>	Heavy metals, petroleum and other pollutants are transported to receiving water sources in quantities that degrade water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>All</li> </ul>	Activities do not contribute contaminants or present the potential for contamination	Petroleum, heavy metals or other potential pollutants are used, stored, handled, managed, and disposed of to avoid runoff or leaching	Client input / planner observation  Vadose zone, groundwater, and/or surface water chemical sampling and assay
- 16 – <b>WATER QUALITY DEGRADATION – Excessive sediment in surface waters</b>	Off-site transport of sediment from sheet, rill, gully, and wind erosion into surface water that threatens to degrade surface water quality and limit use for intended purposes	<ul style="list-style-type: none"> <li>Crop*</li> <li>Developed Land*</li> <li>Farmsteads*</li> <li>Other Rural Land</li> <li>Associated Ag Land</li> <li>Designated Protected Area</li> <li>Water</li> </ul>	Permanent ground cover > 90% and slope < 10% <b>AND</b> Classic gullies are not present <b>AND</b> Streams or shoreline are not on or adjacent to site	Upslope treatment and buffer practices address concentrated flows to water bodies <b>AND</b> SVAP2 - bank condition ≥ 5 <b>AND</b> Livestock and vehicle water crossings are stable <b>AND</b> Water erosion rate ≤ T <b>AND</b> Wind erosion rate ≤ T	RUSLE2  WEPS  Client input / planner observation  SVAP2
		<ul style="list-style-type: none"> <li>Pasture*</li> </ul>	Permanent ground cover > 90% and slope < 10% <b>AND</b> Classic gullies are not present <b>AND</b> Streams or shoreline are not on or adjacent to site	PCS Erosion Element score ≥ 4 <b>AND</b> PCS Livestock Concentration areas element score ≥ 4	
		<ul style="list-style-type: none"> <li>Forest*</li> </ul>	There are no untreated sources of erosion <b>AND</b> Streams or shoreline are not on or adjacent to site	Upslope treatment and buffer practices address concentrated flows to water bodies <b>AND</b> Heavy use areas are stable <b>AND</b> SVAP2 - bank condition ≥ 5	Client input / planner observation  SVAP2

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- 17 – <b>WATER QUALITY DEGRADATION – Elevated water temperature</b>	Surface water temperatures exceed State/Federal standards and/or limit use for intended purposes	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Forest</li> <li>• Pasture</li> <li>• Developed Land</li> <li>• Associated Ag Land</li> <li>• Designated Protected Area</li> <li>• Water</li> <li>• Other Rural Land</li> <li>• Farmsteads</li> </ul>	Water courses on or adjacent to the site are not designated by a State Agency as a temperature impairment <b>OR</b> Water course temperature is not a client concern	SVAP2 - riparian area quality element score $\geq 5$ <b>AND</b> SVAP2 - riparian area quantity quality element score $\geq 5$ <b>AND</b> SVAP2 - canopy cover element score $\geq 6$ <b>OR</b> Existing conservation practices are in place to address water temperature	Client input / planner observation  SVAP2

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**PLANT**

<p><b>- 18 – DEGRADED PLANT CONDITION – Undesirable plant productivity and health</b></p>	<p>Plant productivity, vigor and/or quality negatively impacts other resources or does not meet yield potential due to improper fertility, management or plants not adapted to site</p> <p>This resource concern includes addressing pollinators and beneficial insects.</p>	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Farmsteads</li> <li>• Developed Land</li> <li>• Designated Protected Area</li> <li>• Associated Ag Land</li> <li>• Other Rural Land</li> </ul>	Plant production and health is not a client concern	<p>Plants are adapted to the site, meet production goals and do not negatively impact other resources</p> <p><b>AND</b></p> <p>Plant damage from wind erosion is below Crop Damage Tolerance levels</p>	<p>Client input / planner observation</p> <p>Crop Tolerance Table</p>
				<p><b>OR</b></p> <p>Crop yield is 75% or more of the high management yield potential for the planning soil map unit based on the lesser of U of I Extension Bulletin 811, or Section II of the FOTG</p>	<p>U of I Extension Bulletin 811</p> <p>FOTG</p>
		<ul style="list-style-type: none"> <li>• Pasture*</li> </ul>	Plant production and health is not a client concern	<p>PCS – Percent desirable plants element score <math>\geq 3</math></p> <p><b>AND</b></p> <p>PCS – Live Plant cover element score <math>\geq 4</math></p> <p><b>AND</b></p> <p>PCS - Plant vigor element score <math>\geq 4</math></p> <p><b>AND</b></p> <p>Plants are adapted to the site, meet production goals and do not negatively impact other resources</p>	<p>Client input / planner observation</p> <p>PCS - Pasture Condition Score</p>
				<p><b>OR</b></p> <p>Forage yield is 75% or more of the high management yield potential for the planning soil map unit based on the lesser of U of I Extension Bulletin 811, or Section II of the FOTG</p>	<p>U of I Extension Bulletin 811</p> <p>FOTG</p>
		<ul style="list-style-type: none"> <li>• Forest</li> </ul>	Plant production and health is not a client concern	<p>Forest species are adapted to site</p> <p><b>AND</b></p> <p>Composition and stand density meets the Client’s objectives and production goals</p> <p><b>OR</b></p> <p>Forests consist of healthy stands with vigorous growth having a “fully stocked” stand condition and desirable species representing at least 25% of the overstory trees for the forest site type.</p>	<p>Forest inventory plots and transects forms</p> <p>National Forestry Handbook</p> <p>Current IFMP – Illinois Forest Management Plan (if available)</p>

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- 19 – <b>DEGRADED PLANT CONDITION – Inadequate structure and composition</b>	Plant communities have insufficient composition and structure to achieve ecological functions and management objectives  This resource concern includes degradation of wetland habitat, targeted ecosystems, or unique plant communities.	<ul style="list-style-type: none"> <li>• Forest</li> <li>• Designated Protected Area</li> <li>• Associated Ag Land</li> <li>• Water</li> <li>• Pasture</li> </ul>	Plant communities support the intended land use and desired ecological functions	Plant communities contain adequate diversity, composition and structure to support desired ecological functions	Ecological Site Descriptions
- 20 – <b>DEGRADED PLANT CONDITION – Excessive plant pest pressure</b>	Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes  This resource concern includes invasive plant, animal and insect species	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Forest*</li> <li>• Farmsteads</li> <li>• Developed Land</li> <li>• Associated Ag Land</li> <li>• Designated Protected Area</li> <li>• Water</li> <li>• Other Rural Land</li> </ul>	Plant productivity is not limited from pest pressure	Pest damage to plants are below economic or environmental thresholds or client-identified criteria <b>AND</b> Plant pests, including noxious and invasive species are managed to meet client objectives	Client input / planner observation  Crop Scouting Local Agronomy guides Crop/soil yield comparison in the vicinity  Current IFMP – Illinois Forest Management Plan (if available)
		<ul style="list-style-type: none"> <li>• Pasture*</li> </ul>	Plant productivity is not limited from pest pressure	PCS - Plant vigor element score $\geq 4$	PCS - Pasture Condition Score

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- 21 – <b>DEGRADED PLANT CONDITION– Wildfire hazard, excessive biomass accumulation</b>	The kinds and amounts of fuel loadings - plant biomass - create wildfire hazards that pose risks to human safety, structures, plants, animals, and air resources	<ul style="list-style-type: none"> <li>All</li> </ul>	Wildfire hazard is not a concern	Fuel loads and fuel ladders are managed to provide defensible space and meet client objectives	Client input / planner observation Visual assessment protocols Site and flammable biomass inventories Aerial photo analysis

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**ANIMAL**

- 22 - <b>INADEQUATE HABITAT FOR FISH AND WILDLIFE – Habitat degradation</b>	Quantity, quality or connectivity of food, cover, space, shelter and/or water is inadequate to meet requirements of identified fish, wildlife or invertebrate species	<ul style="list-style-type: none"> <li>All with “Wildlife” modifier (Required when Land Use has a wildlife modifier)</li> </ul>		Illinois Wildlife Habitat Evaluation Index of $\geq 0.5$ for habitat types that comprise more than 25% of the area <b>OR</b> Conservation practices and management are in place that meet or exceed species or guild-specific habitat model thresholds for species of interest and for threatened and endangered species present on site.	Illinois Wildlife Habitat Evaluation (Biology Technical Note IL-18)  Planner observation  Species-specific wildlife habitat assessment tools
				<b>AND (When surface stream present and fish habitat is a concern)</b> SVAP2 – barriers to movement element score $\geq 7$ <b>AND</b> SVAP2 – fish habitat complexity element score $\geq 7$ <b>AND</b> SVAP2 – aquatic invertebrate habitat element score $\geq 7$	Planner observation  SVAP2
- 23 – <b>LIVESTOCK PRODUCTION LIMITATION – Inadequate feed and forage</b>	Feed and forage quality or quantity is inadequate for nutritional needs and production goals of the kinds and classes of livestock	<ul style="list-style-type: none"> <li>All with “Grazed” modifier (Applicable when Land Use is grazed)</li> </ul>		Livestock forage, roughage and supplemental nutritional requirements are addressed	Client input / planner observation  Pasture/Hayland/Livestock Inventory Worksheet  Graze 4 worksheet  GRAS - Grassland Resource Analysis System
- 24 – <b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock shelter</b>	Livestock lack adequate shelter from climatic conditions to maintain health or production goals	<ul style="list-style-type: none"> <li>All with “Grazed” modifier (Applicable when Land Use is grazed)</li> </ul>		Artificial or natural shelters meets animal health needs and client objectives	Client input / planner observation

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- 25 – <b>LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock water</b>	Quantity, quality and/or distribution of drinking water are insufficient to maintain health or production goals for the kinds and classes of livestock	<ul style="list-style-type: none"> <li>All with “Grazed” modifier (Applicable when Land Use is grazed)</li> </ul>		Water of acceptable quality and quantity is adequately distributed to meet animal needs	Client input / planner observation  Inventory of distribution needs  GRAS - Grassland Resource Analysis System - Tool for water distribution

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**ENERGY RESOURCES**

<p>- 26 - <b>INEFFICIENT ENERGY USE – Equipment and facilities</b></p>	<p>Inefficient use of energy in the Farm Operation increases dependence on non-renewable energy sources that can be addressed through improved energy efficiency and the use of on-farm renewable energy sources.</p> <p>As an example, this concern addresses inefficient energy use in pumping plants, on-farm processing, drying and storage.</p>	<ul style="list-style-type: none"> <li>All</li> </ul>	<p>Client is not interested in improving energy efficiency of equipment and facilities used in the farm operation</p>	<p>A USDA approved energy audit is conducted and identified improvements are implemented to improve energy efficiency of equipment and facilities utilized in the farm operation to meet objectives or the client <b>OR</b> On-farm renewable energy and/or energy conserving practices have been implemented to meet client objectives</p>	<p>Client input / planner observation</p> <p>USDA approved Energy Audit (ASABE S612 Type 2 audit)</p> <p>NRCS Energy Estimator Tools</p>
<p>- 27 - <b>INEFFICIENT ENERGY USE – Farming/ranching practices and field operations</b></p>	<p>Inefficient use of energy in field operations increases dependence on non-renewable energy sources that can be addressed through improved efficiency and the use of on-farm renewable energy sources.</p>	<ul style="list-style-type: none"> <li>All</li> </ul>	<p>Client is not interested in improving energy efficiency in farm and ranch field operations</p>	<p>A USDA approved energy audit is conducted and identified improvements are implemented to improve energy efficiency of equipment and facilities utilized in the farm operation to meet objectives of the client <b>OR</b> On-farm renewable energy and/or energy conserving practices have been implemented to meet client objectives</p>	<p>Client input / planner observation</p> <p>USDA approved Energy Audit</p> <p>NRCS Energy Estimator Tools</p> <p>RUSLE2</p>

Resource Concern	Description of Concern	Land Use - * - = Assessment Required	Planning Criteria		Measurement & Assessment Tools
			Screen Level	Assessment Level	

**AIR**

<p>- 28 - <b>AIR QUALITY IMPACTS - Emissions of Particulate Matter (PM) and PM Precursors</b></p>	<p>Direct emissions of particulate matter (dust and smoke), as well as the formation of fine particulate matter in the atmosphere from other agricultural emissions (ammonia, NO<sub>x</sub>, and VOCs) cause multiple environmental impacts, such as:</p> <ul style="list-style-type: none"> <li>• The unintended movement of particulate matter, typically dust or smoke, results in safety or nuisance visibility restriction</li> <li>• The unintended movement of particulate matter and/or chemical droplets results in unwanted deposits on surfaces</li> <li>• Increased atmospheric concentrations of particulate matter can impact human and animal health and degrade regional visibility</li> </ul>	<ul style="list-style-type: none"> <li>• Crop</li> <li>• Pasture</li> <li>• Forest</li> <li>• Other Rural Land</li> <li>• Associated Ag Land</li> <li>• Designated Protected Areas</li> <li>• Developed Land</li> <li>• Farmsteads</li> </ul>	<p>Activities and/or operations that contribute to agricultural source PM or PM precursor emissions are not present. PM &amp; PM precursor producing activities include:</p> <ul style="list-style-type: none"> <li>• Prescribed Burns Travel ways are unpaved or untreated with binding agents</li> <li>• Engines (combustion source)</li> <li>• Tillage</li> <li>• Pesticide applications</li> <li>• Fertilization (manure/commercial)</li> <li>• CAFO/manure management</li> </ul> <p><b>AND</b></p> <p>Episodes or complaints of emissions of PM (dust, smoke, exhaust, etc.), or chemical drift have not occurred</p>	<p>PM and PM Precursor emissions are managed to meet client objectives</p>	<p>Client input / planner observation</p>
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Resource Concern	Description of Concern	Land Use - * - = Assessment Required	Planning Criteria		Measurement & Assessment Tools
			Screen Level	Assessment Level	
-29- <b>AIR QUALITY IMPACTS - Emissions of Greenhouse Gases - GHGs -</b>	Emissions increase atmospheric concentrations of greenhouse gases. (CO <sub>2</sub> , N <sub>2</sub> O, CH <sub>4</sub> )	<ul style="list-style-type: none"> <li>All</li> </ul>	<p>Activities and/or operations that produce GHGs emissions are not present.</p> <p>GHG producing activities include:</p> <ul style="list-style-type: none"> <li>Fertilization (manure/commercial)</li> <li>CAFO/manure management</li> <li>Engines (combustion source)</li> <li>Tillage</li> </ul> <p><b>AND</b></p> <p>GHGs are not regulated in this planning area</p>	Greenhouse gas emissions are managed to meet client objectives	<p>Client input / planner observation</p> <p>RUSLE2</p> <p>Comet 2.0</p> <p>COMET-Energy</p> <p>COMET-Farm</p>
- 30- <b>AIR QUALITY IMPACTS - Emissions of Ozone Precursors</b>	Emissions of ozone precursors - NO <sub>x</sub> and VOCs - resulting in formation of ground-level ozone that cause negative impacts to plants and animals.	<ul style="list-style-type: none"> <li>All</li> </ul>	<p>Activities and/or operations that produce ozone precursor emissions are not present.</p> <p>Ozone producing activities include:</p> <ul style="list-style-type: none"> <li>Engines (combustion source)</li> <li>Pesticide application</li> <li>Burning</li> <li>CAFO/manure management</li> <li>Fertilization (manure /commercial)</li> </ul>	Ozone precursor emissions are managed to meet client objectives	<p>Client input / planner observation</p> <p>RUSLE2</p> <p>COMET-Energy</p> <p>COMET-Farm</p>
- 31 - <b>AIR QUALITY IMPACTS - Objectionable odors</b>	Emissions of odorous compounds - VOCs, ammonia and odorous sulfur compounds - cause nuisance conditions	<ul style="list-style-type: none"> <li>Crop</li> <li>Pasture</li> <li>Farmsteads</li> <li>Other Rural Land</li> </ul>	<p>Activities and/or operations that contribute to nuisance air quality conditions are not present.</p> <p>Nuisance odor producing activities include:</p> <ul style="list-style-type: none"> <li>Pesticide application</li> <li>CAFO / manure management</li> <li>Composting</li> </ul> <p><b>AND</b></p> <p>Odor sources are not regulated in this planning area</p> <p><b>AND</b></p> <p>Episodes or complaints of emissions of PM (dust, smoke, exhaust, etc.), or chemical drift have not occurred</p>	Odors are managed to meet client objectives	Client input / planner observation