RESOURCE CONCERNS & PLANNING CRITERIA FOR CONSERVATION PLANNING

10/1/2012

Resource Concern - Cause	**Description of Concern**	**Land Use**	**Planning Criteria**		**Measurement & Assessment Tools**
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. The "Cause" is the specific reason or threat to the resource that results in the resource concern.		* Required Assessment	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. **Planning Consideration** 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.		Description of the technology or process for determining if assessment criteria are met.
			Screening Level 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. States can delete or edit nationally identified screening criteria to address localized conditions.	***Basic Assessment Level*** Basic assessment level criteria are used when a site does not meet screening level criteria, or when no screening level criteria are defined. Assessment levels are also used when formulating and evaluating alternatives. National criteria establish the minimum for all sites. States may add state-specific criteria to address local conditions.	

SOIL

- 1 **SOIL EROSION - Sheet, rill, & wind erosion**	Detachment and transportation of soil particles caused by rainfall runoff/splash, irrigation runoff or wind that degrades soil quality	• Crop*	Permanent ground cover > 90% and slope < 10%	Water erosion rate ≤ T **AND** Wind erosion rate ≤ T	RUSLE2 WEPS
		• Developed Land* • Farmsteads* • Associated Ag Land* • Designated Protected Area* • Other Rural Land* • Pasture*	Permanent ground cover > 90% and slope < 10%	Water erosion rate ≤ T **AND** Wind erosion rate ≤ T	RUSLE2 WEPS
		• Forest*	Soil surface organic residue cover > 80%	Site is stable and without visible signs of erosion	Visual Inspection
		• Range*	State established criteria.	RHA - soil site stability - slight to moderate or less **OR** Rangeland Planned Trend is positive	RHA - Rangeland Health Assessment Rangeland Trend Worksheet

- 2 **SOIL EROSION – Concentrated flow erosion**	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 **AND** Classic gullies are not present	Conservation practices and managements are in place to prevent or control ephemeral gullies **AND** Classic gully management is adequate to stop the progression of head cutting and widening and are offsite impacts are minimized by vegetation and/or structures	Field measurements / observations
		• Forest* • Farmsteads* • Pasture* • Range* • 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 are offsite impacts are minimized by vegetation and/or structures	
- 3 **SOIL EROSION– Excessive bank erosion from streams shorelines or water conveyance channels**	Sediment from banks or shorelines threatens to degrade water quality and limit use for intended purposes	• Crop* • Forest • Range* • Developed Land* • Associated Ag Land* • Designated Protected Area* • Water* • Other Rural Land* • Farmsteads*	No streams or shoreline are on or adjacent to site **OR** 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 **AND** For streambanks; SVAP2 bank condition element score ≥5 **]** **OR** If present, bank erosion is caused by upstream land use and beyond the client's control	SVAP2
		• Pasture*	No streams or shoreline are on or adjacent to site **OR** No bank erosion from streams, shorelines or conveyance channels present	PCS - streambank / shoreline erosion element score ≥ 4 **AND** For shorelines and water conveyance channels; Banks stable or commensurate with normal geomorphological processes **AND** If present, bank erosion is caused by upstream land use and beyond the client's control	SVAP2 PCS - Pasture Condition Score

- 4 **SOIL QUALITY DEGRADATION - Subsidence**	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 excludes karst / sinkholes issues or depressions caused by underground activities.	• Crop • Forest • Associated Ag Land • Designated Protected Area • Pasture	Histisol soils are not present **OR** Histisol soils are not exhibiting subsidence	Subsidence is adequately managed to meet client's objectives	Client input / planner observation
- 5 **SOIL QUALITY DEGRADATION – Compaction**	Management induced soil compaction resulting in decreased rooting depth that reduces plant growth, animal habitat and soil biological activity	• Crop • Forest • Associated Ag Land • Designated Protected Area • Other Rural Land	Soil compaction is not a problem **AND** Activities do not cause soil compaction problems	Compaction is managed to meet Client's production and management objectives	Observation of soil and/or plant condition Client input / planner observation
		• Pasture	Soil compaction is not a problem **AND** Activities do not cause soil compaction problems	PCS – compaction element score ≥ 4	PCS - Pasture Condition Score
		• Range	Soil compaction is not a problem **AND** Activities do not cause soil compaction problems	RHA - soil site stability - slight to moderate or less **OR** Compaction is managed to meet Client's production and management objectives	RHA - Rangeland Health Assessment Observation of soil and/or plant condition

- 6 **SOIL QUALITY DEGRADATION – Organic matter depletion**	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
		• Pasture	Permanent ground cover > 80%	SCI > 0 **OR** **[** PCS - plant cover element score ≥ 4 **AND** PCS - plant residue element score ≥ 4 **]**	PCS - Pasture Condition Score RUSLE2
		• Range	Soil organic matter depletion is not a problem **AND** Activities do not cause soil organic matter depletion	[RHA - soil site stability - slight to moderate or less **AND** RHA – biotic integrity attribute rating - slight to moderate departure or less] **OR** Rangeland Planned Trend is positive	RHA - Rangeland Health Assessment Rangeland Trend Worksheet
		• Forest	Soil organic matter depletion is not a problem **AND** Activities do not cause soil organic matter depletion	Ground cover meets state criteria specific to ecological site **OR** Soil organic matter is managed to meet Client objectives	Client input / planner observation
- 7 **SOIL QUALITY DEGRADATION – Concentration of salts or other chemicals**	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 • Range • 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

WATER

- 8 **EXCESS WATER – Ponding, flooding, seasonal high water table, seeps, and drifted snow**	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.	• Crop • Forest • Farmsteads • Pasture • Range • Developed Land • Associated Ag Land • Designated Protected Area • Other Rural Land	Excess water is not a problem **AND** Activities do not cause ponding/flooding problems	Excess water is managed to meet Client's objectives	Client input / planner observation
- 9 **INSUFFICIENT WATER – Inefficient moisture management**	Natural precipitation is not optimally managed to support desired land use goals or ecological processes	• Crop • Developed Land • Forest • Associated Ag Land • Designated Protected Area	Moisture Management is not a problem **AND** Activities do not cause inefficient moisture management	Runoff and evapotranspiration levels are minimized to meet Client's management objectives	Client input / planner observation
		• Range*		RHA - hydrologic function attributes slight to moderate or less	RHA - Rangeland Health Assessment
		• Pasture	Moisture Management is not a problem **AND** Activities do not cause inefficient moisture management	PCS – compaction element score ≥ 4 **AND** PCS - plant cover element score ≥ 4	PCS - Pasture Condition Score

- 10 INSUFFICIENT WATER – Inefficient use of irrigation water	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	• All*	PLU is not irrigated	IWI ≥ 85%	IWI - Irrigation Water Index
- 11 WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters	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	• Crop*	Organic or inorganic nutrients are not applied **AND** PLU is not grazed	Nutrient and amendment applications are based on soil or tissue tests and nutrient budgets for realistic yields **AND** Conservation practices and managements are in place to minimize offsite impacts	Client input / planner observation Nutrient budget

- 11 **WATER QUALITY DEGRADATION – Excess nutrients in surface and ground waters**	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	• Pasture*		PCS - streambank / shoreline erosion element score ≥ 4 **AND** PCS - livestock concentration areas element score ≥ 4 **AND** Nutrients are applied and based on a soil test, tissue tests or nutrient budget	PCS – Pasture Condition Score Nutrient budget
		• Developed Land	Organic or inorganic nutrients are not applied	Nutrients if applied, are based on a soil test, tissue tests or nutrient budget **AND** Conservation practices and managements are in place to minimize offsite impacts	
		• Other Rural Land • Associated Ag Land • Designated Protected Area • Water • Forest • Range	Organic or inorganic nutrients are not applied **AND** PLU is not grazed **AND** There are no confined livestock areas	Nutrients if applied, are based on a soil test, tissue tests or nutrient budget **AND** Conservation practices and managements are in place to minimize offsite impacts	
		• Farmsteads*	Organic or inorganic nutrients are not applied **AND** PLU is not grazed **AND** There are no confined livestock areas	Conservation practices and managements are in place to minimize offsite impacts **AND** 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
- 12 **WATER QUALITY DEGRADATION – Pesticides transported to surface and ground waters**	Pest control chemicals are transported to receiving waters in quantities that degrade water quality and limit use for intended purposes	• All	Pest control chemicals are not applied	Pesticides are stored, handled, disposed and managed to prevent runoff, spills, leaks and leaching **AND** Conservation practices and managements are in place to minimize offsite impacts	Client input / planner observation WinPST

- 13 WATER QUALITY DEGRADATION – Excess pathogens and chemicals from manure, bio-solids or compost applications	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.	• Crop* • Farmsteads* • Forest • Developed Land • Associated Ag Land • Other Rural Land • Designated Protected Area • Water • Pasture* • Range	Are potential sources of pathogens or pharmaceuticals applied on the land	Organic materials are applied, stored, and/or handled to mitigate negative impacts to water sources	Client input / planner observation
- 14 WATER QUALITY DEGRADATION – Excessive salts in surface and ground waters	Irrigation or rainfall runoff transports salts to receiving water in quantities that degrade water quality and limit use for intended purposes	• All	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
- 15 WATER QUALITY DEGRADATION – Petroleum, heavy metals and other pollutants transported to receiving waters	Heavy metals, petroleum and other pollutants are transported to receiving water sources in quantities that degrade water quality and limit use for intended purposes	• All	Activities do not present the potential for contamination	Petroleum, heavy metals or other potential pollutants are stored and handled to avoid runoff or leaching	Client input / planner observation

- 16 **WATER QUALITY DEGRADATION – Excessive sediment in surface waters**	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	• Crop* • Developed Land* • Farmsteads* • Other Rural Land • Associated Ag Land • Designated Protected Area • Water • Pasture*	Permanent ground cover > 90% and slope < 10% **AND** Classic gullies are not present **AND** Streams or shoreline are not on or adjacent to site	Upslope treatment and buffer practices address concentrated flows to water bodies **AND** SVAP2 - bank condition ≥ 5 **AND** Livestock and vehicle water crossings are stable **AND** **W**ater erosion rate ≤ T **AND** Wind erosion rate ≤ T	RUSLE2 WEPS Client input / planner observation SVAP2
		• Forest*	There are no untreated sources of erosion **AND** Streams or shoreline are not on or adjacent to site	Upslope treatment and buffer practices address concentrated flows to water bodies **AND** Heavy use areas are stable **AND** SVAP2 - bank condition ≥ 5	Client input / planner observation SVAP2
		• Range*	There are no untreated sources of erosion **AND** Streams or shoreline are not on or adjacent to site	RHA - hydrologic function attribute - slight to moderate or less **AND** SVAP2 - bank condition ≥ 5	RHA - Rangeland Health Assessment SVAP2
- 17 **WATER QUALITY DEGRADATION – Elevated water temperature**	Surface water temperatures exceed State/Federal standards and/or limit use for intended purposes	• Crop • Forest • Pasture • Range • Developed Land • Associated Ag Land • Designated Protected Area • Water • Other Rural Land • Farmsteads •	Water courses on or adjacent to the site are not designated by a State Agency as a temperature impairment **OR** Water course temperature is not a client concern	**[** SVAP2 - riparian area quality element score ≥ 5 **AND** SVAP2 - riparian area quantity quality element score ≥ 5 **AND** SVAP2 - canopy cover element score ≥ 6 **]** **OR** Existing conservation practices are in place to address water temperature	Client input / planner observation SVAP2

PLANT

- 18 DEGRADED PLANT CONDITION – Undesirable plant productivity and health	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 This includes addressing pollinators and beneficial insects.	• Crop • Farmsteads • Developed Land • Designated Protected Area • Associated Ag Land • Other Rural Land	Plant production and health is not a client concern	Plants are adapted to the site, meet production goals and do not negatively impact other resources **AND** Plant damage from wind erosion is below Crop Damage Tolerance levels	Client input / planner observation Crop Tolerance Table
		• Range*		Vegetation meet similarity index of 60 or greater for desired plant community and has a positive trend **OR** RHA – biotic integrity attribute rating - slight to moderate departure or less	RHA - Rangeland Health Assessment Rangeland Trend Worksheet Similarity Index Worksheet
		• Pasture*	Plant production and health is not a client concern	PCS - desirable plants element score ≥ 3 **AND** PCS - plant cover element score ≥ 4 **AND** PCS - plant vigor element score ≥ 4 **AND** Plants are adapted to the site, meet production goals and do not negatively impact other resources	PCS - Pasture Condition Score
		• Forest	Plant production and health is not a client concern	Forest species are adapted to site **AND** Composition and stand density meets the Client's objectives and production goals	Forest inventory plots and transects forms

- 19 DEGRADED PLANT CONDITION – Inadequate structure and composition	Plant communities have insufficient composition and structure to achieve ecological functions and management objectives This includes degradation of wetland habitat, targeted ecosystems, or unique plant communities.	• Forest • Designated Protected Area • Associated Ag Land • Water • Pasture	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
		• Range*	Plant communities do not support the intended land use and desired ecological functions	Plant communities contain adequate diversity, composition and structure to support desired ecological functions **OR** RHA – biotic integrity attribute rating slight to moderate departure or less **OR** Vegetation meet similarity index of 60 or greater for desired plant community and has a positive trend	Ecological Site Descriptions RHA - Rangeland Health Assessment Rangeland Trend Worksheet Similarity Index Worksheet
- 20 DEGRADED PLANT CONDITION – Excessive plant pest pressure	Excessive pest damage to plants including that from undesired plants, diseases, animals, soil borne pathogens, and nematodes This concern addresses invasive plant, animal and insect species	• Crop • Forest* • Farmsteads • Range* • Developed Land • Associated Ag Land • Designated Protected Area • Water • Other Rural Land	Plant productivity is not limited from pest pressure	Pest damage to plants are below economic or environmental thresholds or client-identified criteria **AND** Plant pests, including noxious and invasive species are managed to meet client objectives	Client input / planner observation
		• Pasture*	Plant productivity is not limited from pest pressure	PCS - insect and disease pressure element score ≥ 4 **AND** PCS - site adaptation element score ≥ 4	PCS - Pasture Condition Score
- 21 DEGRADED PLANT CONDITION– Wildfire hazard, excessive biomass accumulation	The kinds and amounts of fuel loadings - plant biomass - create wildfire hazards that pose risks to human safety, structures, plants, animals, and air resources	• All	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

ANIMAL

- 22 INADEQUATE HABITAT FOR FISH AND WILDLIFE – Habitat degradation	Quantity, quality or connectivity of food, cover, space, shelter and/or water is inadequate to meet requirements of identified fish, wildlife or invertebrate species	All with "wildlife" modifier - (Required when Land Use has a wildlife modifier) •		**[** WHSI rating ≥ 0.5 **AND (when surface stream present)** SVAP2 – barriers to movement element score ≥ 7 **AND** SVAP2 – fish habitat complexity element score ≥ 7 **AND** SVAP2 – aquatic invertebrate habitat element score ≥ 7] **OR** Conservation practices and management are in place that meet or exceed species or guild-specific habitat model thresholds **OR** [Food, water, space and cover is of available quality and extent to support habitat requirements for the species of interest **AND** The connectivity of habitat components is adequate to support stable populations of targeted species **]**	Species-specific wildlife habitat assessment tools SVAP2 Generalized WHS Index finalized by States, and detailed models by selected species and habitat type
- 23 LIVESTOCK PRODUCTION LIMITATION – Inadequate feed and forage	Feed and forage quality or quantity is inadequate for nutritional needs and production goals of the kinds and classes of livestock	• All with "grazed" modifier (Applicable when Land Use is grazed)		Livestock forage, roughage and supplemental nutritional requirements are addressed	Client input / planner observation GRAS - Grassland Resource Analysis System
- 24 LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock shelter	Livestock lack adequate shelter from climatic conditions to maintain health or production goals	• All with "grazed" modifier (Applicable when Land Use is grazed)		Artificial or natural shelters meets animal health needs and client objectives	Client input / planner observation
- 25 LIVESTOCK PRODUCTION LIMITATION – Inadequate livestock water	Quantity, quality and/or distribution of drinking water are insufficient to maintain health or production goals for the kinds and classes of livestock	• All with "grazed" modifier (Applicable when Land Use is grazed)		Water of acceptable quality and quantity is adequately distributed to meet animal needs	Client input / planner observation GRAS - Grassland Resource Analysis System - Tool for water distribution

ENERGY

- 26 - INEFFICIENT ENERGY USE – Equipment and facilities	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. As an example, this concern addresses inefficient energy use in pumping plants, on-farm processing, drying and storage.	• All	Client is not interested in improving equipment and facilities energy efficiency	A USDA approved energy audit been implemented that address equipment and facilities to meet client objectives **OR** On-farm renewable energy and/or energy conserving practices have been implemented to meet client objectives	Client input / planner observation USDA approved Energy Audit NRCS Energy Estimator
- 27 - INEFFICIENT ENERGY USE – Farming/ranching practices and field operations	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.	• K - All	Client is not interested in improving energy use in farm and ranch field operations	A USDA approved energy audit been implemented that address field operations to meet client objectives **OR** On-farm renewable energy and/or energy conserving practices have been implemented to meet client objectives	Client input / planner observation USDA approved Energy Audit NRCS Energy Estimator Conservation on the Farm Checklist

AIR

- 28 **AIR QUALITY IMPACTS - Emissions of Particulate Matter - PM - and PM Precursors**	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, NOx, and VOCs - cause multiple environmental impacts, such as: - The unintended movement of particulate matter - typically dust or smoke - results in safety or nuisance visibility restriction - The unintended movement of particulate matter and/or chemical droplets results in unwanted deposits on surfaces - Increased atmospheric concentrations of particulate matter can impact human and animal health and degrade regional visibility	• Crop • Pasture • Range • Forest • Other Rural Land • Associated Ag Land • Designated Protected Areas • Developed Land • Farmsteads	Activities are not present that contribute to agricultural source PM or PM precursor emissions PM Producing Activities: • Prescribed Burn is conducted • Travel ways are unpaved or untreated with binding agents • Engines (combustion source) • Tillage • Pesticides are applied • Fertilization (manure /commercial) • CAFO/manure management) **AND** Episodes or complaints of emissions of PM (dust, smoke, exhaust, etc.), or chemical drift have not occurred	PM and PM Precursor emissions are managed to meet client objectives	Client input / planner observation

- 29 **AIR QUALITY IMPACTS - Emissions of Greenhouse Gases - GHGs -**	Emissions increase atmospheric concentrations of greenhouse gases.	• All	Activities are not present that produce GHGs emissions GHG Producing Activities: • Fertilization (manure/commercial) • CAFO/manure management • Engines (combustion source) • Tillage **AND** GHGs are not regulated in this planning area	Greenhouse gas emissions are managed to meet client objectives	Client input / planner observation
- 30 **AIR QUALITY IMPACTS - Emissions of Ozone Precursors**	Emissions of ozone precursors - NOx and VOCs - resulting in formation of ground-level ozone that cause negative impacts to plants and animals.	• All	Operations are not present that produce ozone or precursor emissions Ozone Producing Activities: • Engines (combustion source) • Pesticide application • Burning • CAFO/manure management • Fertilization (manure /commercial)	Ozone precursor emissions are managed to meet client objectives	Client input / planner observation
- 31 **AIR QUALITY IMPACTS - Objectionable odors**	Emissions of odorous compounds - VOCs, ammonia and odorous sulfur compounds - cause nuisance conditions	• Crop • Pasture • Farmsteads • Other Rural Land	Activities are not present that contribute to nuisance air quality conditions Nuisance Producing Activities: • Pesticide application • CAFO / manure management • Composting is conducted **AND** Odor sources are not regulated in this planning area **AND** Episodes or complaints of emissions of PM (dust, smoke, exhaust, etc.), or chemical drift have not occurred	Odors are managed to meet client objectives	Client input / planner observation