

RESOURCE CONCERN FIELD ID WORKSHEET – FORM A

LAND USES ^{2/}

RESOURCE CONCERNS ^{1/}

BENCHMARK CONDITION ^{3/}

A. SOIL

1. EROSION

	C	R	P	H	F	O
a. Sheet and Rill						
b. Wind						
c. Ephemeral Gully						
d. Classic Gully						
e. Streambank						
f. Shoreline						
g. Irrigation Induced						
h. Soil Mass Movement						
i. Roadbank and Construction Areas						
j. Other						

2. CONDITION

	C	R	P	H	F	O
a. Organic Matter Depletion						
b. Rangeland Site Stability						
c. Compaction						
d. Subsidence						
e. Contaminants, Salts and Other Chemicals						
f. Contaminants, Animal Waste and Other Organics						
g. Contaminants, Fertilizer						
h. Contaminants, Pesticides						
i. Sediment Deposition						
j. Other						

B. WATER

1. QUANTITY

	C	R	P	H	F	O
a. Rangeland Hydrologic Cycle						
b. Excessive Seeps						
c. Ponding / Flooding						
d. Excess Subsurface Water						
e. Drifted Snow						
f. Inadequate Outlets						
g. Water Management, Irrigated						
h. Water Management, Non-Irrigated						
i. Reduced Capacity of Conveyances						
j. Reduced Storage of Water Bodies						
k. Aquifer Overdraft						
l. Insufficient Flows in Water Courses						
m. Other						

2. QUALITY

	C	R	P	H	F	O
a. Groundwater Contaminants, Pesticides						
b. Groundwater Contaminants, Nutrients and Organics						
c. Groundwater Contaminants, Salinity						
d. Groundwater Contaminants, Heavy Metals						
e. Groundwater Contaminants, Pathogens						
f. Groundwater Contaminants, Petroleum						
g. Surface Contaminants, Pesticides						
h. Surface Contaminants, Nutrients and Organics						
i. Surface Contaminants, Turbidity						
j. Surface Contaminants, Salinity						
k. Surface Contaminants, Heavy Metals						
l. Surface Contaminants, Temperature						
m. Surface Contaminants, Pathogens						
n. Harmful Levels of Petroleum						
o. Other						

RESOURCE CONCERN FIELD ID WORKSHEET – FORM A

RESOURCE CONCERNS ^{1/}

LAND USES ^{2/}

C | R | P | H | F | O

BENCHMARK CONDITION ^{3/}

C. AIR

1. QUALITY

a.	Particulate, Less than 10 Micrometers								
b.	Particulate, Less than 2.5 Micrometers								
c.	Ammonia								
d.	Chemical Drift								
e.	Objectionable Odors								
f.	Reduced Visibility								
g.	Undesirable Air Movement								
h.	Adverse Air Temperature								
i.	Other								

D. PLANTS

a.	Adapted to the Site or Suited for Intended Use								
b.	Productivity, Health and Vigor								
c.	T&E Species Listed or Proposed for Listing								
d.	T&E Species, Declining, Species of Concern								
e.	Noxious and Invasive								
f.	Forage Quality and Palatability								
g.	Wildfire Hazard								
h.	Other								

E. ANIMALS

1. FISH AND WILDLIFE

a.	Inadequate Food								
b.	Inadequate Cover and/or Shelter								
c.	Inadequate Water Quantity and Quality								
d.	Inadequate Space								
e.	Habitat Fragmentation								
f.	Imbalance Among and Within Populations								
g.	T&E Species Listed or Proposed for Listing								
h.	T&E Species, Declining, Species of Concern								
i.	Other								

2. DOMESTIC ANIMALS

a.	Inadequate Quantities and Quality of Feed and Forage								
b.	Inadequate Shelter								
c.	Inadequate Stock Water								
d.	Stress and Mortality								
e.	Other								

^{1/} Problems that degrade or reduce sustainability of the identified resource.

^{2/} Mark each land use where a resource concern has been identified.

C=Cropland, R=Rangeland, H=Hayland, P=Pastureland, F=Forestland, O=Other.

^{3/} Description of existing condition (i.e., 3 tons/acre/year soil loss from wind erosion).

RESOURCE CONCERN FIELD ID WORKSHEET – FORM B

LAND USES ^{2/}

RESOURCE CONCERNS ^{1/}

C | R | P | H | F | O

RESOURCE INDICATORS

A. SOIL

1. EROSION

a.	Sheet and Rill							Rills, alluvial, sediment, deposition, plant pedestals
b.	Wind							Blowing dust, dunes, deposition, pedestalling, subsoil
c.	Ephemeral Gully							Visual, small channels
d.	Classic Gully							Visual, enlarging or increasingly entrenched permanent channels
e.	Streambank							Slumping, denuded banks
f.	Shoreline							Slumping, denuded shoreline
g.	Irrigation Induced							Sediment deposition on furrow ends, furrow downcutting
h.	Soil Mass Movement							Slumps, land slides
i.	Roadbank and Construction Areas							Borrow area gully, scouring
j.	Other							

2. CONDITION

a.	Organic Matter Depletion							OM test, long-term crop/fallow sequence, crusting
b.	Rangeland Site Stability							Visual flow patterns, wind scour, plant pedestals
c.	Compaction							Visual, hardened surface, low plant vigor
d.	Subsidence							Decreased surface elevation, sinkholes, increase in bulk density
e.	Contaminants, Salts and Other Chemicals							Bare soil spots, sclerosis, discolored leaves and/ or soil surface
f.	Contaminants, Animal Waste and Other Organics							No plant growth, burnt vegetation sites
g.	Contaminants, Fertilizer							Burnt and/or elongated vegetation, bare soil, soil tests
h.	Contaminants, Pesticides							Bare soil spots, hard crumbly soil, plant stress
i.	Sediment Deposition							Sediment accumulation, bare soil spots
j.	Other							

B. WATER

1. QUANTITY

a.	Rangeland Hydrologic Cycle							Lack of water storage, increased dead organic matter residues
b.	Excessive Seeps							White soil surface, bare soil, excessive wetness, crop/fallow cropping sequence, glacial till areas
c.	Ponding / Flooding							Organic material residues, wetting parameter, scouring
d.	Excess Subsurface Water							Surface salts, plant stress, wetland vegetative indicators
e.	Drifted Snow							Restrict movement of humans and animals, crop plant response
f.	Inadequate Outlets							Frequent flooding
g.	Water Management, Irrigated							Low relative production, producers water use
h.	Water Management, Non-Irrigated							Crop sequence, current rotation, growing seasonal precipitation
i.	Reduced Capacity of Conveyances							Reduced flow capacity, sediment, obstructions,
j.	Reduced Storage of Water Bodies							Frequent flooding, reduced storage volumes (sediment/ organic)
k.	Aquifer Overdraft							Declining water tables, dry wells
l.	Insufficient Flows in Water Courses							Dewatered streams
m.	Other							

2. QUALITY

a.	Groundwater Contaminants, Pesticides							Water test, pesticide use, and associated soil
b.	Groundwater Contaminants, Nutrients and Organics							Water test, color, water plant/animal species, fertilizer use
c.	Groundwater Contaminants, Salinity							Water test, pH
d.	Groundwater Contaminants, Heavy Metals							Water test, pH, reduced aquatic species, near mine spoils
e.	Groundwater Contaminants, Pathogens							Existing producer water tests
f.	Groundwater Contaminants, Petroleum							Water test, odor, taste,
g.	Surface Contaminants, Pesticides							Producer pesticide use, proximity to application sites, fish kill
h.	Surface Contaminants, Nutrients and Organics							Algae color, fertilizer/manure/proximity to water, , fish kill
i.	Surface Contaminants, Turbidity							“cloudy” water, suspended sediment, etc.
j.	Surface Contaminants, Salinity							Chemical analysis, white crusts/seepage on stream banks
k.	Surface Contaminants, Heavy Metals							Chemical analysis, proximity to mines, fish kill
l.	Surface Contaminants, Temperature							Temperature reading, fish kills
m.	Surface Contaminants, Pathogens							Water tests, health problems
n.	Harmful Levels of Petroleum							Sheen on water surface, fish kills
o.	Other							

RESOURCE CONCERN FIELD ID WORKSHEET – FORM B

LAND USES ^{2/}

RESOURCE CONCERNS ^{1/}

C | R | P | H | F | O

RESOURCE INDICATORS

C. AIR

1. QUALITY

a.	Particulate, Less than 10 Micrometers									List of Alaska designated non-attainment areas
b.	Particulate, Less than 2.5 Micrometers									List of Alaska designated non-attainment areas
c.	Ammonia									List of Alaska designated non-attainment areas
d.	Chemical Drift									Chemical use patterns, proximity to sensitive vegetation or urban areas
e.	Objectionable Odors									Proximity to urban areas or other olfactory sensitive conditions
f.	Reduced Visibility									Impaired site distance
g.	Undesirable Air Movement									Vegetation damage, stagnation
h.	Adverse Air Temperature									Damage to crops, growing of late maturation crops
i.	Other									

D. PLANTS

a.	Not Adapted to the Site or Suited for Intended Use									Low seral species exist, stunted growth, noxious weeds, close cropping by grazers, prostrate growth habit, invasive species
b.	Productivity, Health and Vigor									Number and size of seedheads, tillers, rhizomes, size of plants, tree spacing, age, diameter, site index, yellowing, stunted, dead plants
c.	T&E Species Listed or Proposed for Listing									One or more T&E species listed are located on the property
d.	Other Species of Special Concern									One or more rare or declining species occurs on property
e.	Noxious and Invasive									Noxious weeds, low seral species, foraging, insect abundance
f.	Forage Quality and Palatability									Harvest schedule, grazing patterns/ use, tillers, seedhead, plant community, composition, plant size, re-growth ability
g.	Wildfire Hazard									Trees near structures, overstocked stand, ladder fuels
h.	Other									

E. ANIMALS

1. FISH AND WILDLIFE

a.	Inadequate Food									Inappropriate/ low forage items for local/ indigenous wildlife
b.	Inadequate Cover and/or Shelter									Lack of appropriate vegetation or aquatic habitat structure, animals with no apparent refuge from elements
c.	Inadequate Water Quantity and Quality									Location of current water supply
d.	Inadequate Space									Water, cover, and food supply interspersed and amount is not appropriate for the wildlife species of interest
e.	Habitat Fragmentation									Some habitats (ex., grassland or early seral stages) are no longer present at a scale large enough for area-sensitive species
f.	Imbalance Among and Within Populations									One or more wildlife populations are either too numerous or too limited for ecosystem health
g.	T&E Species Listed or Proposed for Listing									One or more T&E species listed are located on the property
h.	Other Species of Special Concern									One or more rare or declining species occurs on the property
i.	Other									

2. DOMESTIC ANIMALS

a.	Inadequate Quantities and Quality of Feed and Forage									Inappropriate forage species, prostrate growth habits, low vigor, low weaning weights, livestock health
b.	Inadequate Shelter									Animals with no apparent refuge from elements
c.	Inadequate Stock Water									Location of current water supply reduces site utilization
d.	Stress and Mortality									Livestock condition, death loss
e.	Other									

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^{2/} Mark each land use where a resource concern has been identified.

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RESOURCE CONCERN FIELD ID WORKSHEET

RESOURCE CONCERN DEFINITIONS

A. Soil

1. Erosion

- a. **Sheet and Rill:** Detachment and transport of soil particles caused by rainfall splash and runoff degrade soil quality.
- b. **Wind:** Detachment and transport of soil particles caused by wind, degrade soil quality and/ or damage plants.
- c. **Ephemeral Gullies:** 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.
- d. **Classic Gully:** Deep permanent channels caused by convergence of surface runoff degrade soil quality. They enlarge progressively by headcutting and lateral widening.
- e. **Streambank:** Accelerated loss of streambank soils restricts land and water use and management.
- f. **Shoreline:** Soil is eroded along shorelines by wind and wave action, causing physical damage to vegetation, limiting land use, or creating a safety hazard.
- g. **Irrigation Induced:** Excessive irrigation water application and/ or improper equipment operation are causing soil erosion that degrades soil quality.
- h. **Soil Mass Movement:** Soil slippage, landslides or slope failure, normally on hillsides result in movement of large volumes of soil materials.
- i. **Road, Road Sides and Construction Sites:** Soil loss occurs on areas left unprotected during or after road building and/ or construction activities..

2. Condition

- a. **Organic Material Depletion:** Soil organic matter has or will diminish to a level that degrades soil quality.
- b. **Rangeland Site Stability:** The capacity to limit re-distribution and loss of soil resources (including nutrients and organic matter) by wind and water.

Resource Concern Definitions--CONTINUED

- c. **Soil Compaction:** Compressing soil particles and aggregates caused by mechanical compaction adversely affect plant soil moisture relationships.
- d. **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.
- e. **Soil Contaminants, Salts, and Other Chemicals:** 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.
- f. **Soil Contaminants, Animal Wastes and Other Organic Nutrients:** Nutrient levels from applied animal waste and other organics restrict desired use of the land.
- g. **Soil Contaminants / Excess Fertilizers:** Over application of fertilizer degrades plant health and vigor or exceeds the soil capacity to retain nutrients.
- h. **Soil Contaminants / Excess Pesticides:** Residual pesticides in the soil have an adverse effect on non-target plants and animals.
- i. **Sediment Deposition:** Deposition damages or restricts land use/management or adversely affects ecological processes.

B. Water

1. Quantity

- a. **Rangeland Hydrologic Cycle:** The capacity to capture, store, and safely release water from rainfall, run-on, and snowmelt (where relevant).
- b. **Seeps:** Subsurface water intersects and flows onto the land surface and restricts land use or management.
- c. **Ponding / Flooding:** The land becomes inundated restricting land use and management.
- d. **Excess Subsurface Water:** Water saturates upper soil layers restricting land use and management.
- e. **Drifted Snow:** Wind-blown snow deposits and accumulates around and over surface structures restricting ingress, egress, and conveyance of humans and animals.
- f. **Inadequate Outlets:** Natural or constructed outlets too small to remove excess water in a timely manner.

Resource Concern Definitions--CONTINUED

- g. **Water Management, Irrigated:** Limited water supplies are not optimally used.
- h. **Water Management, Non-Irrigated:** Natural moisture is not optimally utilized
- i. **Reduced Capacity of Conveyances by Sediment Deposition:** Sediment deposits in ditches, canals, culverts, and other water conveyances reduce the desired flow capacity.
- j. **Reduced Storage of Water Bodies by Sediment Deposition:** Sediment deposits in water bodies reduce the desired volume capacity.
- k. **Aquifer Overdraft:** Water withdrawals exceed recharge rates.
- l. **Insufficient Flow in Water Courses:** Water flows are not consistently available in sufficient quantities to support ecological processes, land use and management.

2. Quality

Groundwater Contaminants

- a. **Pesticides:** Residues resulting from the use of pest control chemicals degrade groundwater quality.
- b. **Nutrients and Organics:** Pollution from natural or human induced nutrients such as N, P, and organics (including animal and other wastes) degrades groundwater quality.
- c. **Salinity:** Pollution from salts such as Ca, Mg, Na, K, HCO₃, CO₃, Cl, and SO₄ degrades groundwater quality.
- d. **Heavy Metals:** Natural or human induced metal pollutants present in toxic amounts degrade groundwater quality.
- e. **Pathogens:** Kinds and numbers of viruses, protozoa, and bacteria are present at a level that degrades groundwater quality.
- f. **Petroleum:** Fuel, oil, gasoline, and other hydrocarbons present in toxic amounts degrade groundwater quality.

Resource Concern Definitions--CONTINUED

Surface Water Contaminants

- a. **Pesticides:** Pest control chemicals present in toxic amounts degrade surface water quality.
- b. **Nutrients and Organics:** Pollution from natural or human induced nutrients such as N, P, and organics (Including animal and other wastes) degrades surface water quality.
- c. **Suspended Sediment and Turbidity:** Excessive concentrations of mineral or organic particles, algae, or organic stains degrade surface water quality.
- d. **Salinity:** Pollution from salts such as Ca, Mg, Na, K, HCO₃, HCO₃, CO₃, Cl, and SO₄ degrades surface water quality.
- e. **Heavy Metals:** Natural or human induced metal pollutants are present in toxic amounts that degrade surface water quality.
- f. **Temperature:** Undesired thermal conditions degrade surface water quality.
- g. **Pathogens:** Kinds and numbers of viruses, protozoa, and bacteria are present at a level that degrades surface water quality.
- h. **Petroleum:** Fuel, oil, gasoline, and other hydrocarbons present in toxic amounts degrade surface water quality.

C. Air

1. Quality

- a. **Particulate Matter less than 10 micrometers in diameter (PM 10):** Particulate matter less than 10 micrometers in diameter are suspended in the air causing potential health hazards to humans and animals.
- b. **Particulate Matter less than 2.5 micrometers in diameter (PM 2.5):** Particulate matter less than 2.5 micrometers in diameter are suspended in the air causing potential health hazards to humans and animals.
- c. **Ammonia:** Animal waste and inorganic commercial fertilizers emit ammonia that contributes to odor, is a PM 2.5 precursor, and contributes to acid rain.
- d. **Airborne Chemical Drift:** Materials applied for pest control drift downwind and contaminate/injure non-targeted fields, crops, soils, water, animals and humans.

Resource Concern Definitions--CONTINUED

- e. **Objectionable Odors from Agricultural Sources:** Land use and management operations produce offensive smells.
- f. **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).
- g. **Air Movement:** Wind velocities (too little or too much) reduce animal or plant productivity, impact human comfort and increase energy consumption.
- l. **Air Temperature:** Air temperatures (too cold or too hot) reduce animal or plant productivity, impact human comfort and increase energy consumption.

D. Plants

- a. **Adapted or Suited to the Site:** Plants are not adapted and/or suited to site conditions or client objectives.
- b. **Productivity, Health, and Vigor:** Plant communities do not produce yields, quality, and soil cover to meet client objectives.
- c. **T&E Species Listed or Proposed for Listing:** The site includes individuals, habitat or potential habitat for one or more plant species listed or proposed for listing under the Endangered Species Act.
- d. **T&E Species Declining or Species of Concern:** The site includes individuals, habitat or potential habitat for one or more plant species that the State or Tribal government jurisdiction, or the State Technical Committee, has identified as a species of concern. This includes plant species which have been identified as candidates for listing under the Endangered Species Act.
- e. **Noxious and Invasive Plants:** This site has noxious or invasive plants present.
- f. **Forage Quality and Palatability:** Plants do not have adequate nutritive value or palatability for the intended use.
- g. **Wildfire Hazard:** The kinds and amounts of fuel loadings (plant biomass) pose risks to human safety, structures, and resources should wildfire occur.

Resource Concern Definitions--CONTINUED

E. Animals

1. Fish and Wildlife

- a. **Inadequate Food:** Quantity and quality of food is unavailable to meet the life history requirements of the species or guild of species of concern.
- b. **Inadequate Cover or Shelter:** Cover/shelter for the species of concern is unavailable or inadequate. For aquatic species this includes lack of hiding, thermal, and/or refuge cover.
- c. **Inadequate Water:** The quantity and quality of water is unacceptable for the species or guild of concern.
- d. **Inadequate Space:** Lack of area and fragmentation of areas disrupt life history requirements of the species of concern.
- e. **Habitat Fragmentation:** Habitat has insufficient structure, extent, and connectivity to provide ecological functions and/or achieve management objectives.
- f. **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.
- g. **T&E Fish and Wildlife Species Listed or Proposed for Listing:** The site includes individuals, habitat or potential habitat for one or more fish or wildlife species listed or proposed for listing under the Endangered Species Act.
- h. **T&E Species Declining or Species of Concern:** The site includes individuals, habitat or potential habitat for one or more fish or wildlife species that the State or Tribal government jurisdiction, or the State Technical Committee, has identified as a species of concern. This includes fish and wildlife species which have been identified as candidates for listing under the Endangered Species Act.

2. Domestic Animals

- a. **Inadequate Quantities and Quality of Feed and Forage:** Total feed and forage are insufficient to meet the nutritional and production needs of the kinds and classes of livestock.
- b. **Inadequate Shelter:** Livestock are not protected sufficiently to meet the production goals for the kinds and classes of livestock.
- c. **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.
- d. **Stress and Mortality:** Animals exhibit illness or death from disease, parasites, insects, poisonous plants, or other factors.