

Delaware Pasture Condition Score Worksheet

Producer or Farm Name: _____

Date: _____

Evaluator: _____

Pasture Number(s):

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1 POINT	2 POINTS	3 POINTS	4 POINTS	5 POINTS	SCORE		
% DESIRABLE PLANTS					Desirable forage plants (defined on page 2) as % of stand's total dry matter (DM) weight		
<20%	20-40%	40-60%	60-80%	>80%			
PLANT COVER					Live stem & green-leaf cover of all desirable & intermediate plants as % of soil surface		
<50%	50-70%	70-90%	90-95%	>95%			
PLANT DIVERSITY					# of well-represented (>20% of stand's DM weight) forages within groups defined on page 2		
1 forage	2+ forages from 1 functional group with uneven utilization	3+ forages from 1 functional group with no forages avoided or 2 forages from different groups	3+ compatible intermixed forages with >1 legume	4+ compatible intermixed forages from 3 functional groups with >1 legume			
PLANT RESIDUE					Decaying vegetation as % of soil surface between plants		
None	<10%	10-20%	20-30%	>30%			
PLANT VIGOR					<i>If score is 1-3, use page 3 to score the factors that cause poor vigor</i>		
Productivity <30% of potential: very few forage leaves photosynthetically active	Productivity 30-50% of potential: forages appear yellow-green or stressed	Productivity 50-75% of potential: forages show minor stress with obvious color contrast against urine/dung spots	Productivity 75-90% of potential: forages show only minor stress with slight color contrast against urine/dung spots	Productivity at site potential: forages are healthy, competitive, exhibit natural green color			
% LEGUME					Leguminous forbs as % of stand's total DM weight in cool-season (warm-season) pasture		
<10% (<5%)	10-20% (5-10%)	20-30% (10-20%)	30-40% (20-30%)	>40% (>30%)			
UNIFORMITY OF USE					% of pasture surface exhibiting spot or patch grazing		
>50% avoided by livestock	25-50% avoided by livestock	10-25% avoided by livestock	Few patches avoided	Only urine/dung spots avoided			
LIVESTOCK CONCENTRATION AREAS					Concentration areas as % of soil surface & their drainage into surface water		
>10% or all drain directly into surface water	5-10% or most drain directly into surface water	<5% or 1 drains directly into surface water	Few areas & all have vegetative buffers	None or all sited & treated to minimize water quality impact			
SOIL COMPACTION					Probe moist soil with pin flag wire (15½ gauge)		
Resistance to pushing flag wire into top 2" of soil	Resistance to pushing flag wire past top 2-4" of soil	Resistance to pushing a flag wire past top 4-8" of soil	Little resistance to pushing flag wire into top 6-8" of soil	No resistance to wire penetration into soil			
SHEET & RILL EROSION					<i>Average in scores from other erosion types (on page 2) when present</i>		
Sheet & rill erosion active throughout pasture: rills 3-8" deep at close intervals and/or grazing terraces are close-spaced with some slope slippage	Most sheet & rill erosion confined to steepest terrain: well-defined rills ½-3" deep at close intervals and/or grazing terraces present	Most sheet & rill erosion confined to heavy use areas: rills ½-3" deep, plant and/or soil debris dams piled at downslope edge	No current formation of rills, some evidence of past historic rill formation that are now vegetated, scattered plant and/or soil debris dams occasionally present	No evidence of current or past formation of sheet flow or rills			
PASTURE CONDITION SCORE (Total):							

ADDITIONAL EROSION TYPES					<i>If present, average these scores with sheet & rill erosion from previous page</i>		
1 POINT	2 POINTS	3 POINTS	4 POINTS	5 POINTS	SCORE		
GULLY EROSION					Extent of soil erosion in channels deeper than 1 foot		
Mass movement of soil, rock, plants, debris: occurrence of landslides, debris avalanches, slumps, earth-flow, creep, debris torrents	Gully(s) advancing upslope cutting longer channel(s), revegetation difficult without using constructed structures, continuous gully(s) with many finger-like extensions	Gully(s) present with scattered active erosion, no vegetation at heavy-use slopes and/or on bed below overfalls, new eroding channels present & new overfalls appearing along main channel	1+ existing stable gullies present, vegetation covers gully bottom & slopes reasonably well, no visual signs of active cutting at gully head or sides, some soil moved in channel bottom	No gullies, natural drainageways are stable vegetated channels, spring or seep-fed bare channels are often covered with overhanging vegetation			
STREAMBANK & SHORELINE EROSION					Extent of soil erosion on shores or banks of surface water		
Banks are mostly bare & sloughing, no native vegetation remaining	Bank vegetation is heavily grazed & trampled, bank sloughing & erosion is quite evident, little native vegetation remaining	Bank vegetation is grazed close but slopes not heavily trampled nor actively eroding, some native vegetation remaining, heavy livestock traffic at a few specific points	Bank vegetation is grazed but slopes are stable, site-appropriate plants along water's edge, muddy livestock stream or pond entrance(s) not used heavily	Bank vegetation is ungrazed or grazed infrequently & has abundant site-appropriate plants with stabilized or constructed livestock stream crossing(s) or watering ramp(s)			
WIND EROSION					Extent of soil erosion, soil deposition, and plant damage caused by wind		
Blowouts or dunes present or being formed by wind	Soil swept causing plant death by burial or abrasion	Soil swept during establishment of new stand causing plant death by burial or abrasion	Some dust deposited & vegetative debris windrowed, minor wind damage to plant leaves	No visible signs of windblown soil or litter, no wind-related leaf damage			

EXAMPLE PLANT GROUPINGS		Desirability will depend on the livestock type being grazed
DESIRABLE PLANTS Readily consumed, provide high tonnage & quality for significant part of the growing season		
Functional group 1. Perennial grasses		
Cool-season: KY bluegrass, orchardgrass, perennial ryegrass, reed canary, smooth brome, tall fescue, timothy		
Warm-season: Bermudagrass, big bluestem, dallisgrass, eastern gamagrass, indiagrass, switchgrass		
Functional group 2. Annual grasses		
Cool-season: Annual ryegrass, barley, oats, rye, triticale, wheat		
Warm-season: Corn, crabgrass, millet (browntop, foxtail, pearl), sorghum, sudangrass		
Functional group 3. Legumes		
Cool-season: Alfalfa, birdsfoot trefoil, clover (alsike, large white, red, sweet), pea, vetch (bigflower, hairy)		
Warm-season: Annual lespedeza, soybean, sunn hemp		
Functional group 4. Other forbs bred for forage: Beet, chicory, kale, plantain, radish, rape, swede, turnip		
INTERMEDIATE PLANTS Consumed by livestock but provide low tonnage or lose quality fast		
Grasses: Barnyardgrass, little bluestem, phragmites, purpletop, quackgrass, wildrye		
Forbs: Black medic, chickweed, dock, dandelion, garlic, lambsquarter, clover (hop, small white), pepperweed, plantain		
UNDESIRABLE PLANTS Rejected by livestock, cause undesirable side effects, or crowd-out desirable species		
Grasses/rushes/sedges: Basketgrass, broomsedge, carpetgrass, foxtail, goosegrass, johnsongrass, nutsedge, stiltgrass		
Forbs: Bindweed, burdock, buttercup, cocklebur, dogbane, henbit, horsenettle, ironweed, jimsonweed, marestalk, milkweed, mullein, perilla, pigweed, poison hemlock, pokeweed, ragweed, smartweed, star of Bethlehem, thistle (biennial, Canada), white snakeroot		

FACTORS AFFECTING PLANT VIGOR					<i>Do not add or average these scores into page 1</i>		
1 POINT	2 POINTS	3 POINTS	4 POINTS	5 POINTS	SCORE		
PHOSPHORUS & POTASSIUM STATUS					Phosphorus & potassium status of the soil		
Very low <u>or</u> very high P & K <u>or</u> no soil test	Low P & low/very high K <u>or</u> very high P & low/optimum K <u>or</u> optimum P & very high K	Low P & optimum/high K <u>or</u> optimum/high P & low K <u>or</u> high P & K	Optimum P & high K <u>or</u> high P & optimum K	Optimum P & K			
NITROGEN STATUS					Apparent nitrogen status of plant tissue		
Yellow-brown	Yellow-pale green	Pale green	Pale-natural green	Natural green			
SOIL pH					pH status of the soil for the upper 4" rooting zone		
pH <4.5 <u>or</u> >9.0 <u>or</u> no soil test	pH 4.5-5.0 <u>or</u> 8.5-9.0	pH 5.1-5.5 <u>or</u> 7.9-8.4	pH 5.6-6.0 <u>or</u> 7.4-7.8	pH 6.0-7.3			
SEVERITY OF USE					Intensity & frequency of forage removal		
Severely overgrazed <u>or</u> detrimentally ungrazed	Continuously over-grazed <u>or</u> detrimentally undergrazed	Severe spot-grazing	Some spot-grazing, mostly at urine/dung spots	Grazed appropriately			
SITE ADAPTATION OF DESIRED SPECIES					Longevity & competitiveness of desired plants		
Properly planted & established desired forages no longer present	Properly planted & established desired forages nearly gone, unwanted plants dominate	1+ properly planted & established desired forages missing, unwanted plants invading	Properly planted & established desired forages still represented but not in desired proportions	Properly planted & established desired forages present in desired proportions			
CLIMATIC STRESSES					Apparent stress from recent or extended weather patterns		
Brownout from drought or frost-heaved plants, most with severed roots & dying <u>or</u> major loss due to submergence or ice sheets	Wilted plants with little recovery during night <u>or</u> some frost-heaved plants with slow recovery <u>or</u> some spotty stand loss due to submergence or ice sheets	Wilting during heat of the day <u>or</u> weak plants from winter damage or short-term submergence <u>or</u> freezing damage to foliage	Dry conditions but no wilting <u>or</u> abnormal temperatures slowing growth <u>or</u> slight leaf yellowing due to cold wet conditions	No evidence of stress due to recent or long-term weather patterns			
INSECT / DISEASE PRESSURE					Level of plant stress due to insect and/or disease pressure		
Insects or diseases have consumed or damaged more than 50% of the leaf surface area	Insect or disease outbreak at economic threshold: treatment needed immediately	Insect or disease outbreak near economic threshold	Some insect and/or disease is present, but little impact on forage quality or quantity	No visible signs of plant damage due to pest or diseases			

SCORE INTERPRETATION					Interpretations of individual scores & total pasture condition score				
1 POINT		2 POINTS		3 POINTS		4 POINTS		5 POINTS	
10-15 TOTAL POINTS		15-25 TOTAL POINTS		25-35 TOTAL POINTS		35-45 TOTAL POINTS		45-50 TOTAL POINTS	
Major effort required in time, expense, management		Needs immediate management changes, high return likely		Improvements benefit productivity and/or environment		Minor changes would enhance, do most beneficial first		No changes in management needed at this time	