Ecological State: Pasture, SilvoPasture

Revision Date: May 25, 2022

HUB Michigan State University

Hub Verifier Matt R. Raven

				DEPARTURE FROM REFERENCE SHEET						ECOLOGICAL PROCESSES			
NUM.	ECO. INDICATORS	PROCESS INDICATOR	SCORE	None to slight	Slight to moderate	Moderate	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cvcle	Energy Flow	Com Dynam	
1	LIVE CANOPY ABUNDANCE	% of SITE POTENTIAL	-10 TO 10	Live canopy exceeds 80% of potential site production based on recent climate. Maximum photosynthesis. Reduce one score class if more than 40% of biomass is annual plants	60-80% of live canopy abundance potential based on recent climate. Reduce one score class if more than 40% of biomass is annual	40-60% of site live canopy potential based on recent climate.Reduce one score class if more than 40% of biomass is annual	20-40% of site live canopy potential based on recent climate.Reduce one score class if more than 40% of biomass is annual	Less than 20% of site live canopy potential based on recent climate. Minimal photosynthesis			y"		
				10	5	0	-5	-10					
2	MICROFAUNA	EVIDENCE OF MICROFAUNA	-10 TO 10	Microfauna life signs are abundant and very easy to find	Slight to moderate reduction to microfauna signs, still abundant	Moderate reduction of microfauna signs. Some components missing	Little abundance of microfauna signs related to site potential.	Next to no sign of microfauna. Components of the ecosystem are clearly missing.		Jere .			
				10	5	0	-5	-10				1	
4	FG 1 COOL SEASON GRASSES	Vigour, Reprod and crown integrity of Key Species:	-10 TO 10	Amount of floral stems and young plantsof this group matches site and year potential.	Amount of floral stems and young plants of this group is slightly lower than site and year potential.	The group maintains a moderate amount of flower stems and young plants	Stand reproduction is significantly reduced. Minimal amount of flower stems. Young plans unfrequent	The group stand does not exhibit flower stems or young plants				<i>y</i> *	
		Orchard Grass, Timothy, Smooth Brome, Meadow Fescue, Perennial Rye		Plants show vigour and amount of green leaves that matches the expected for the site and the year.	Plants show vigour and amount of green leaves that is slightly below the expected for the site and the year.	Moderate loss of vigour and increase of % standing dead. Few decadent or dead plants	High frequency of plants with poor growth and high standing dead percentage. High percentage of plants with dead centers	Decadent or dead plants are the most common. Abundant standing dead material				V ^{jea}	
				10	5	0	-5	-10					
5	FG 2 FORBS & LEGUMES	Vigour, Reprod and crown integrity of Key Species:	-10 TO 10	Amount of floral stems and young plantsof this group matches site and year potential.	Amount of floral stems and young plants of this group is slightly lower than site and year potential.	The group maintains a moderate amount of flower stems and young plants	Stand reproduction is significantly reduced. Minimal amount of flower stems. Young plans unfrequent	The group stand does not exhibit flower stems or young plants				J ^{ar}	
		White Clover, Red Clover, Alfalfa		Plants show vigour and amount of green leaves that matches the expected for the site and the year.	Plants show vigour and amount of green leaves that is slightly below the expected for the site and the year.	Moderate loss of vigour and increase of % standing dead. Few decadent or dead plants	High frequency of plants with poor growth and high standing dead percentage. High percentage of plants with dead centers	Decadent or dead plants are the most common. Abundant standing dead material				J ^{per}	
				10	5	0	-5	-10				L	
	FG 3 TREES & SHRUBS	Vigour, Reprod and crown integrity of Key Species:	-10 TO 10	Amount of floral stems and young plantsof this group matches site and year potential.	Amount of floral stems and young plants of this group is slightly lower than site and year potential.	The group maintains a moderate amount of flower stems and young plants	Stand reproduction is significantly reduced. Minimal amount of flower stems. Young plans unfrequent	The group stand does not exhibit flower stems or young plants				J ^{ar}	
6		Sugar Maple, White Oak, Chestnut, Beech, Locust		Plants show vigour and amount of green leaves that matches the expected for the site and the year.	Plants show vigour and amount of green leaves that is slightly below the expected for the site and the year.	Moderate loss of vigour and increase of % standing dead. Few decadent or dead plants	High frequency of plants with poor growth and high standing dead percentage. High percentage of plants with dead centers	Decadent or dead plants are the most common. Abundant standing dead material				Jan Star	
				10	5	0	-5	-10					
7	CONTEXTUALLY DESIRABLE RARE SPECIES	FREQUENCY of Birdsfoot Trefoil	0 TO 10	Species frequency is the maximum expected for the site and the year.	Species frequency is lower than expected for the site, but still abundant.	Minimal frequency of species. Hard to find.	Species only in protected areas.	Species only in protected areas.				1 ^{pr}	
				10	5	0	0	0					
8	CONTEXTUALLY UNDESIRABLE SPECIES	Abundance and reproduction of Bracken Fern, Hawthorn, Autumn Olive	0 TO -10	Undesirable species are absent or in low abundance Contextually undesirable are abunda			Contextually undesirable species are abundant	Contextually undesirable species very abundant, co-dominate or dominate the site				J ^{err}	
				Frequency of young plants ofcontextually undesirable species is minimal			Frecuency of young plants of contextually undesirable species is high. Invasive species are increasing.	Contextually undesirable species show a high frequency of young plants, a fast transicion is happening.				Jene .	
				0	0	0	-5	-10				<u> </u>	
				60	30	0	- 30	-60					

Ecological State: Pasture, SilvoPasture

Revision Date: May 25, 2022

HUB: Michigan State University

Hub Verifier: Matt R. Raven

				DEPARTURE FROM REFERENCE SHEET						ECOLOGICAL PROCESSES			
NUM.	ECO. INDICATORS	PROCESS INDICATOR	SCORE	None to slight	Slight to moderate	Moderate	Moderate to extreme	Extreme to total	Water Cycle	Mineral Cycle	Energy Flow	Com Dynam	
9	LITTER ABUNDANCE	%COVER	0 TO 10	Amount is what is expected for the site potential and weather >85%	Slightly more or less relative to site potential and weather 70-84%	Litter is scarce, absent or in excess for the site <70%			J ^{er}	Jerre .			
	, SONDANCE			10	5	0							
10	LITTER INCORPORATION	LITTER/SOIL CONTACT	0 TO 10	Litter mixes well with soil and it is composting	Some litter is composting and other is mulching	Litter is detached from soil surface and is not decomposing. (Mulching litter)				J ^{er}			
				10 5 0									
11	DUNG DECOMPOSITION	DUNG AGE STRUCTURE	0 TO 10	Dung decomposes fast, most dung pellets age is less than one year. High insect activity	Dung decomposes slightly slower, but old dung pellets are relatively few. Moderate insect activity	White, mummified dung	White, mummified dung is predominant. Decomposition is slow. Little insect activity						
				10	5		0						
12	BARE SOIL	% BARE SOIL	-20 TO 20	Amount and size of bare areas match what expected for the site <5%	Slightly to moderate higher than expected for the site. Bare areas are small and rarely connected 5- 15%	Moderately higher than expected for the site. Bare areas are of moderate size and sporadically connected 15-25%	Moderate to much higher than expected for the site. Bare areas are large and occcasionally connected 25-35%	Much higher than expected for the site. Bare areas are large and usually interconnected >35%	J ^{ear}	Jose .	J ^{ar}	Jan .	
				20	10	0	-10	-20					
13	CAPPING	SURFACE SOIL RESISTANCE	-10 TO 0	Soil surface is loose or with a light capping that breaks easily with the finger			Obvious capping, that breaks making pressure with the finger	Heavy Capping, requires metal object to break. Mature capping	J ^{ear}				
				0 -5				-10					
14	WIND EROSION	ACTIVE BLOWOUT/DEPOSITION PROCESSES	0 TO -20	Soil is stable, evidence of deflation/deposition patterns is absent or ocassional.			Blowout/deposition patterns are frequent, but not conected	Extensive blowout/deposition patterns. Connected	J ^{er}				
		ACTIVE PEDESTALS		Not present, and if present, very unfrequent and with depth less than 2 cm			Moderate Active pedestalling. Terracettes common.Some rocks and plants are pedestalled with occassional exposed roots. Sediment movement follows predominant wind direction	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled, exposed plant roots are common.Sediment movement follows predominant wind direction	J ^{ar}				
				0			-10	-20					
15	WATER EROSION	LITTER MOVEMENT		Sheet erosion hard to identify. Soil stable			Sheet erosion is evident but not generalized. Transported litter accumulate at obstacles	Sheet erosion is evident and extensive. Litter accumulates at obstacles	J ^{ar}				
		ACTIVE RILLS		Not present, and if present, very unfrequent and with depth less than 2 cm			Moderate Active pedestalling. Terracettes common.Some rocks and plants are pedestalled with occassional exposed roots. Sediment movement follows water flow directionn	Abundant active pedestalling and numerous terracettes. Many rocks and plants are pedestalled, exposed plant roots are common.Sediment movement follows water flow directionn	J ^{err}				
		ACTIVE WATER FLOWS	0 to -20	Minimal evi	dence of past or current soil deposition or erosion		Water flow patterns more numerous and extensive than expected; occasionally connected	Water flow patterns extensive and numerous; unstable with active erosion; ussually connected	Jean of the second seco				
		ACTIVE GULLIES		Drainages are represented as natural stable channels; vegetation common and no signs of erosion			Moderate in number to common with indications of active erosion;vegetation is intermittent on slopes and/or bed. Headcuts are active; downcutting is not apparent	Common with indications of active erosion and downcutting; vegetation is infrequent on slopes and/or bed. Nickpoints and headcuts are numerous and active	J. Bar				
		TOTAL		0			-10	-20					
			-	50 25 0			-35	-70					
			1	110	==	•	65	120					