

CONDITION RANKING FORM

(December 20, 2021)

Central Dry Pine Woodland (FDc23)

Evaluators:		Pre-scoring rank:
Date:	County:	
GPS Coordinates:	Waypoint #	
Site Name:	Site #	
Previous Releve #	Previously Identified NPC Type/Subtype:	
Current Releve #	NPC Type/Subtype:	Growth Stage:
Extent of Evaluation (circle one): Releve / Polygon / Other		

Determining the condition rank of a FDc23 site begins with completing the Species Checklist procedure on page 4. Use the resulting abundance codes for the Scoring Sheet on page 2. On the Scoring Sheet, evaluate each category to calculate how many points should be deducted from the standard 50. Explanations for some categories are below in the order they appear on the scoring sheet.

Degradation “Decreasers” and “Increasers”

These species, identified on the Species Checklist, tend to decrease or increase after human disturbance, especially soil surface alteration. Recently burned sites may retain many decreaseers and have few increasers. The identification of Decreaser species was based on Coefficients of Conservatism (c.c. values) in Floristic Quality Assessment (FQA) tables from Minnesota and Wisconsin as well as the professional judgement of ecologists and foresters with extensive survey experience in FDc23 sites.

Deer Browsing

When deer are abundant, browse-sensitive species decline in abundance or disappear altogether, and jack pine seedlings rarely make it out of the browse zone (2 meters tall). Browse pressure is assessed by noting the proportion of browsed stems on the woody species present. Calculating a shrub-based browse index using the method described Table 3 on page 3 can aid in the proper determination of browse severity.

Expected Tree Species Composition & Structure

After determining the stand’s growth stage, compare the stand to the expected attributes in Table 1 (for species composition) and Table 2 on page 3 (for canopy structure).

Soil Disturbance

Fire typically removes the organic duff layer but leaves the mineral soil surface intact. Light soil scarification from a few passes of tree skidding causes similar or even less disturbance. Points should be deducted for soil disturbance only when the mineral soil surface is impacted by

mechanical scraping, churning or compaction. Disturbances like rock raking, disc trenching, skid trails, and OHV trails can damage the roots of fire-adapted plant species and promote invasive species. Log landings and other permanent conversions are not considered part of the stand to be ranked. Further discussion of impacts to soil from natural and human disturbances is found in the reference information that begins on page 5.

Dead Wood (Snags, Coarse Woody Debris, Fine Woody Debris)

Refer to Table 1 for expected amount of dead wood, depending on growth stage. Expected woody debris will be greater than indicated in the event of significant windthrow or mortality from native insects or disease. Do not deduct points due to these natural disturbances.

Table 1. Expected Attributes for Tree Species Composition and Dead Wood by Growth Stage

Expected attributes are based on conditions when fire is the predominant stand-replacing and stand-maintaining disturbance, i.e. natural origin stands.

(left blank)	Early (0-55 years)	Transition (55-75 yrs)	Mature & Old (>75 yrs)
Tree Canopy Composition	Jack pine dominant (may be sparse at first). Scattered individuals of red pine, oaks, aspen, and birch.	Red pine may become co-dominant with jack pine. On moister sites, aspen may increase, but not above 10% cover. (If greater than 10%, community may be FDc24.) Other minor species may persist, but are not increasing.	Older jack pine declines, but is replaced by regeneration in canopy gaps. Red pine, when present, may surpass jack pine. Aspen and other minor species may persist, but are not increasing.
Snags	Snags remain standing after stand-replacing disturbance, gradually falling as the stand ages.	Few snags early in transition, but increasing as initial cohort jack pine begins to senesce.	Moderate number of snags maintained as older jack pines continue to die.
Woody Debris (CWD and FWD)	Little CWD in the youngest stands, but increasing as legacy snags fall. Fine woody debris absent at first, then increasing from self-thinning.	Some well-decayed logs from legacy snags. Ground fires keep small, self-thinned logs from accumulating.	There is a pulse of logs when initial cohort jack pines fall. Older stands maintain a moderate number of logs as jack pine snags continue to fall.

SCORING SHEET Assign the best value for each category and sum at the bottom

GROUND LAYER PLANTS (refer to species checklist on page 4)

Category	Value Explanation	Value
Degradation "Decreasers"	0 = At least 4 species from this list are present AND at least 20 individuals of these species are present. -1= two to three species present AND ≥ 20 individuals. -2= >2 species present AND <20 individuals. -4= Fewer than 2 species present; only rare scattered individuals.	Assign value here
Sod-forming Graminoids	0 = Sod-forming grasses or sedges are rare, scattered, or occasional. Abundance Code is R or F. -2= These species are common, but not abundant. Abundance Code C. -3= These species are abundant or dominant. Abundance Code $\geq A$.	Assign value here
Degradation "Increasers"	0 = Species from this list are rare. Abundance Code is R. -1= These spp. are scattered or occasional. Abundance Code is F. -2= These species are common, but not abundant. Abundance Code C. -4= These species are abundant or dominant. Abundance Code $\geq A$.	Assign value here
Prairie Specialists	0 = At least 6 species from this list are present AND they have an Abundance Code of $\geq F$. -1= Three to five of these species are present AND Abundance Code is $\geq F$. -2= Three to five of these species are present AND Abundance Code is R. -4= No prairie species are present, or 1-2 species are present as single individuals.	Assign value here
Mosses & Lichens	0 = Abundance code of mosses and lichens is $\geq C$, or, where tree canopy is absent, mosses and lichens may be very sporadic. -1= Tree canopy is present, and Abundance Code is $\leq F$.	Assign value here
Uncommon & Rare Species (Bonus Point)	+1 = At least one species from this list is present	Assign value here

TREES & TALL SHRUBS (refer to species checklist on page 4)

Category	Value Explanation	Value
Jack Pine Regeneration	0 = Local ecotype jack pines $<5m$ (16.4 ft) tall have an Abundance Code $\geq F$. -1= Jack pines $<5m$ tall are $\geq F$, ecotype non-local or unknown. -2= Jack pines $<5m$ tall are rare or absent.	Assign value here
Tall Shrub Cover	0 = Tall shrubs are rare, scattered, or occasional. Abundance Code is R or F. -1= Tall shrubs common, but not abundant. Abundance Code is C. -2= Tall shrubs are abundant to dominant. Abundance Code $\geq A$.	Assign value here
Deer Browse	0 = Browsing impact on woody stems is low (index < 0.2). -1= Impact on woody stems is moderate to high (index ≥ 0.2).	Assign value here

TREES & TALL SHRUBS continued

Category	Value Explanation	Value
Tree Species Composition	0 = Composition matches growth stage description in Table 1. -1= Composition approximates the relevant growth stage description in Table 1, but with slightly more hardwoods or red pine than expected. -2= Composition does not match description in Table 1.	Assign value here
Tree Cover & Structure	0 = Refer to Table 2: Tree Cover and Structure on page 3 to determine point deduction. -2= Refer to Tree Cover and Structure Table. -4= Refer to Tree Cover and Structure Table.	Assign value here

SOIL LAYER

Category	Value Explanation	Value
Organic Content	0 = Conifer duff absent, or, if present, lying directly above sandy mineral soil with little organic content. -1= Upper layer of soil is becoming darker and loamier than below.	Assign value here
Soil Disturbance (refer to page 1 for definition of disturbance)	0 = Mineral soil surface appears to have had minimal to no human alteration. Disturbed soil covers $<1\%$ of area. -1= Past alteration of the mineral soil surface affected only localized areas (1-5% of area), e.g., skid trails or OHV trails. -2= Widespread past alteration of mineral soil surface, covering $>5\%$ of area, but now revegetated with mostly native species typical of FDc23. -4= Widespread past alteration of mineral soil surface, covering $>5\%$ of area, which has not revegetated with mostly native FDc23 species.	Assign value here

DEAD WOOD

Category	Value Explanation	Value
Snags	0 = Snag abundance matches growth stage description in Table 1. -1= Snag abundance does not match the description in Table 1.	Assign value here
Woody Debris	0 = Woody debris matches growth stage description in Table 1. -1= Woody debris does not match the description in Table 1.	Assign value here
Fire	0 = Evidence of past fire present, e.g., charred wood, soil charcoal. -1= Evidence of past fire absent.	Assign value here

TOTAL SCORE (Deduct all assigned values from 50) = _____
Highest possible score = 51 (with bonus point); Lowest = 15

CONDITION RANK SCALE: A(≥ 48) AB(45-47) B(42-44) BC(36-41) C(31-35) CD(28-30) D(≤ 27)

This scoring sheet, including the rank scale, requires additional testing and refining. Feel free to assign a different rank, and provide an explanation. This information can help improve these ranking guidelines.

Table 2. Tree Cover and Structure: determining point deduction

Determine the appropriate Growth Stage and choose which of the three descriptions best applies to the stand. For stands that have experienced partial canopy removal by fire or logging (>25% cover remains), the age of the older trees (not the new regeneration) determines the growth stage.

(left blank)	Post Stand-Replacement Disturbance (0-20 years)	Early (20-40 years)	Early (40-55 years)	Transition & Mature & Old (>55 years)
Expected Attributes, No Deduction	Jack pine is regenerating. It may be dense, or it can be sparse when the seed source is in adjacent stands. Some legacy jack or red pines persist from before the disturbance.	A tree canopy has formed, but tree density is variable and includes gaps approximately 10-20 meters across. In general, the distance to a canopy gap at least 10 meters across is no more than 20 meters from any point in the stand. Parts of the stand can be quite open and experience prolonged pine establishment. Some legacy jack or red pines persist from before the disturbance.	Multi-aged pines with declining canopy density, saplings recruiting into the canopy, and seedlings in expanding gaps. Even-aged conditions, if present earlier, are now fading.	Highly variable density of trees with various sized gaps. A variety of age cohorts with continual recruitment of young pines. In Transitional stands (55-75 years), the initial cohort of Jack pine continues to decline. In Mature and Old stands (>75 years) red pine, if present, moves into canopy and super canopy positions.
Two Points Deducted	Jack pine is regenerating, but legacy trees are absent or nearly so.	The tree canopy has gaps, but they are generally farther apart. Legacy trees are absent or nearly so.	The canopy has some gaps, but the trees are primarily even-aged with high density.	The canopy has some gaps, but the trees are primarily even-aged with high density.
Four Points Deducted	Jack pine either failed to regenerate or, if present, it is in jeopardy of being smothered by aspen or hazel.	Canopy gaps are absent or nearly so, and the only pines present are from the initial cohort.	High-density, even-aged trees with uniform, plantation-like structure.	High-density, even-aged trees with uniform, plantation-like structure.

Table 3. Calculating an index of deer browse

Mark **PU** if *present and unbrowsed*. Mark **B** if *browsed*.

SPECIES NAME	Circle 1	Circle 2	Circle 3	Circle 4	Circle 5
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B
Species name:	PU / B	PU / B	PU / B	PU / B	PU / B

Count of all marks (PU + B): _____ = **P** Count of all B marks: _____ = **B**

Browse Index (**B/P**) = _____

For 5 circular plots with 1m radius, list all woody species present (P) in browse zone (0.2-1.8m high), and mark which show some browsing (B), including stems browsed in past years, but excluding hare or rabbit browse. Doing more than 5 circular plots (up to 30) would reduce sampling error, especially when shrubs are sparse. To avoid bias, place circles in a random or systematic fashion.

At the end of the transect, stop to summarize for the whole community/stand the Abundance/Cover (A/C¹) codes for each individual species. In addition, for the species groups with a space provided, summarize the Collective Abundance of all plants in each species group, using the Abundance codes at the bottom of this page¹.

[illegible]

E.g. enter "C/2" for a plant that is common in small patches that cover about 5-25% of the ground.

Reference Information