

## SILVICS ASSIGNMENT – SPECIES TABLE

\*\*This silvics sheet (V.1.2) was compiled by the 60 trainees who participated in the Certificate Course in Ecosystem Silviculture, 2005 – 2007.

**Tree Common Name:** Paper Birch

**Tree Scientific Name:** Betula papyrifera

TREE SPECIES ADAPTATIONS		
<b>GENERAL</b>		
	Longevity/typical life span for Lake States	100-150 yrs, 60-70 yrs few longer 140 or older,
	Maximum stem height	100 ft, 70' average, 100 ft excellent site
	Any mycorrhizal requirements/info.	Ecto Associate
<b>REPRODUCTION</b>		
	Minimum seed bearing age	15 yrs, Optimum 40-70, 16 yrs
	Fruit type (cone, catkin, and so on)	Catkin, w/winged nutlet
	Periodicity of large seed crops	2 yrs, 1 -2 yrs good, bumper crop 10 yrs
Seed dispersal	Date	Year round, best Sept – Nov, June to Nov
	Mode <sup>1</sup>	Wind
	Distance (max)	Long >100 m , up to 400m especially over snow
Seed Characteristics	Longevity	2 yrs @ room temp, 18 months @ room temp @ 1% moist
	Weight	Light, 1.4 million seeds/lb
	Germination percentage	34%
	Time of ripening	Aug – mid Sept
	Viable seed percentage	Lower viability
	Sprouting ability	Stump sprout, good, susceptible to heavy browsing
	Seedling regeneration strategy <sup>2</sup>	Seedbank and current year
	Any cold stratification period	0 to -5 degrees and exposure to light , prechilliry
	Preferred seedbed <sup>3</sup>	Mineral soil or humus mix, large organic debris
<b>ESTABLISHMENT</b>		
Seedbed Conditions	Light requirements	50 % or greater sunlight
	Soil surface temperatures	68 – 77 degrees, above freezing
	OM thickness	Thin
	Shrub/herb cover	Minimal, rubus and pincherry problem competitors
	Moisture	Moderate dry to moist
	Any soil pH requirements	5-7 pH
	Seedling growth rate information	
<b>DEVELOPMENT</b>		
Juvenile environmental requirements	Light requirements	Full sun
	Shade tolerance	Intolerant
	Growth rates/competition info	Good < 60 years, greater release when younger
	Response to release/age relations - juvenile	
	Juvenile growth rate information	
	Height growth determinate/indeterminate	
	Self-pruning	Moderately
<b>DAMAGING AGENTS – ANY STAGE<sup>4</sup></b>		
	Flowers	
	Fruits	

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TREE SPECIES ADAPTATIONS		
	Leaves	Anthrachnose, leaf spot, defoliators
	Growth	Deer, moose, hares
	Decay/Defect	Armillaria,
	Bark	Fire, logging
	Roots	heat
WILDLIFE/CONSERVATION CONSIDERATIONS		
	Cavity tree potential <sup>5</sup>	Fair
	Common mast consumers	Ruffed grouse, chickadees
	Known RTSE issues	
	Known principal associated species (avian, mammal, herps, and so on)	Example: salamanders in duff of northern hardwoods
HABITAT		
	Forest Ecological System (Aitkin County)	FD and MH
	Native Plant Community (MN DNR)	FDn 32, 33, 43 MHn 35, 44, 45, 47 MHc 26, 37, 47 Also flood plain forests
	Habitat Type (Kotar)	Large trees (>4in dbh): dry mesic (poor to medium), dry mesic to mesic and mesic (medium), dry mesic to mesic (poor to medium), mesic to wet mesic (medium); saplings: all habitat types above except dry mesic to mesic (medium).
	Forest structure	Multi storied and even-aged
Mature tree environmental requirements	Moisture <sup>6</sup>	Moderate, wide range
	Nutrients <sup>6</sup>	Moderate
	Shade tolerance <sup>7</sup>	Intolerant
	Response to release/age relations - mature	Can succumb to shading, stands over 60 yrs seldom respond to thinning > 60 yrs little response
	Soil pH (extremely acid or alkaline soil requirements only)	5 – 7
	Drought tolerance <sup>7</sup>	Intermediate, loses leaves in response to drought
	Water-logging	Moderately tolerant
	High temperatures	Intolerable, Roots sensitive to higher temps, after logging
	Windfirmness <sup>8</sup>	Very firm, more likely for bole to break than up root in high winds
Canopy	Gap size	½ ha
	Density	20%

- 1 Seed dispersal – mode. Select from the following: wind, mammals, water, birds
- 2 Seedling regeneration strategy. Report the dominant seedling strategy from the following: Seedling Bank, Soil Seed Bank, Current Seed Crop, Serotinous Cones.
- 3 Preferred seedbed. Mineral Soil, Humus, Humus/Soil Mix, Pioneer Mosses, Sphagnum Mosses, Decaying Wood, Burned Duff, Burned Organic Soils, And Organic Soils
- 4 Damaging Agent – Any stage including: fruit, seedlings, juvenile, mature. Damaging agents – Mechanical, Insect, Disease, Herbivory and so on
- 5 Cavity tree potential – “Managing for the birds” booklet
- 6 Environmental requirements – moisture & nutrients. Low, Moderate, and High
- 7 Environmental requirements – shade & drought. Very Tolerant, Tolerant, Intermediate, Intolerant, Very Intolerant
- 8 Windfirmness - not stem breakage
- 9 Forest structure – multi or single layers? Example, forbs (ground nesters), shrubs, canopy, co-dominants, dominants