Wisconsin Forest Habitat Type Classification System

John Kotar, Joseph Kovach and Timothy Burger
University of Wisconsin-Madison

Foresters typically classify and map forests by

Forest Cover Type

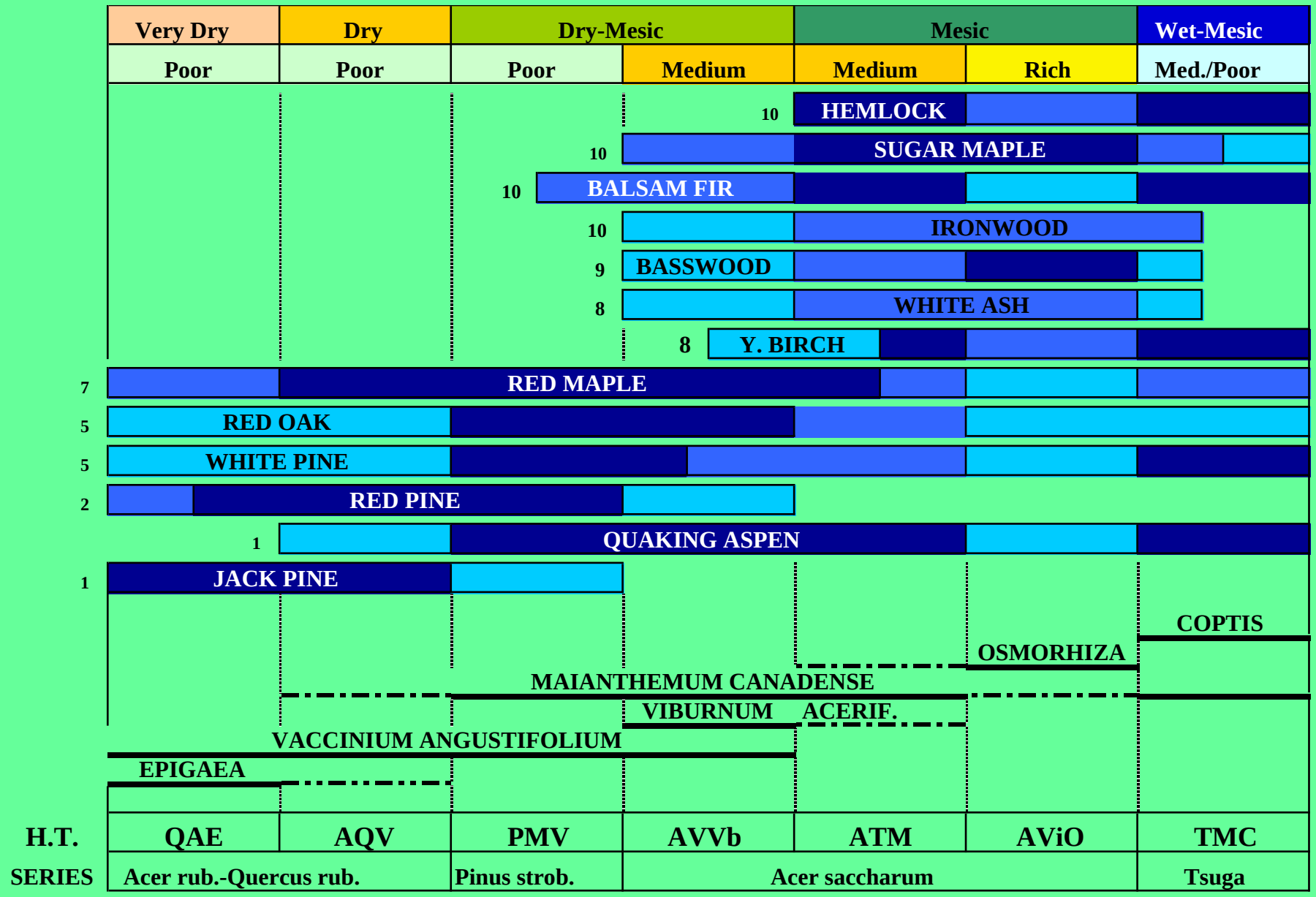
Cover Types do not necessarily reflect site conditions

e.g., a jack pine forest is not always “xeric”

and

a sugar maple-basswood forest is not always “mesic”

Species occurrence on habitat types spanning the moisture-nutrient gradient



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Habitat Types are identifiable by distinct Assemblages (Associations) of understory plants

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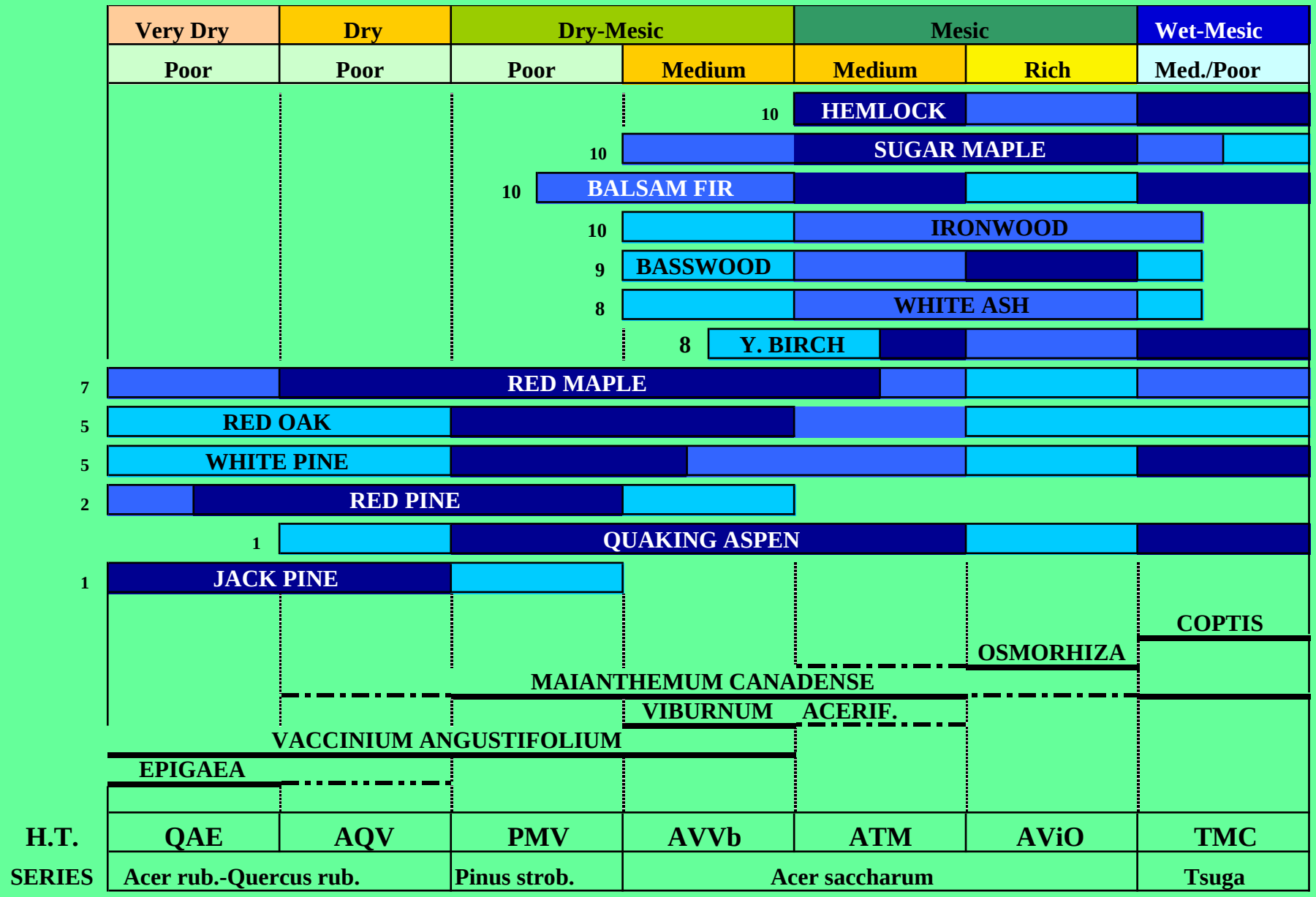

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Habitat Types are identifiable by distinct Assemblages (Associations) of understory plants

Plot number

Species	1	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
Actaea rub		1		1	2	1		1	2			2			1	1				1			2		2	2			2	1			1	
Allium tri												2			1	1				1					1					2			1	1
Amelanchier sp.	1	1	2	3	1			2	2				3	1	1	2	1	1	1	1	1	2	2	1	1	1	2	2	2	1	2	1	1	2
Amphicarpa brac											1		2	3	1			1	1								1		2	1	1	1		
Aralia nud		2		3	1	2			1		1	1	1	2	3	1		2	1			1	2	1	1	1	2		3	2	2		2	1
Arisaema tri		2			1	2						1			1					1			1		1	2				1			1	1
Aster mac	1	1	2	3	1	2	2	2	1	2	3	1	4	4	1	1	2	4	4	2	1	2	1	3	2	2	3	1	4	1	3	4	2	1
Caulophyllum thal					2	2			1			1		1		1				2			1			1				1			1	2
Chimaphilla umb	1						2			2														1				1						
Cladina sp.	1		2							2	1		1				1				2			1				1						
Clintonia bor		1	1					2	1		1	1	1	2	1	1			2							2	1		1	1		2		
Comptonia per	4		3				3			4							3				4													
Corylus corn	3	1	3	4	1	1	4	3	1	2	3	1	2	1	1	2	3		2	1	3	2	2	2	1	1	2	4	2	2	2	3	2	1
Desmodium glut		1						2			2		1	1					1			1					3		2	1		1		
Diervilla lon	1		2	2			1	1		1	2			2			1	1	2				1						1		2			
Dryopteris spin				2	2	2		3	1		1		2		1	1		1		2		1	2		1	1	2	1	2	2	2		2	1
Epigaea rep	1		1				1			2	1						2	1	1		1			1				1						
Galium bor	1		1														1		1		1			1				1						
Galium tri		2		1	2	1	1		2		1			1	1	2		2	1	1		1	1		1		1			2	1	1	1	
Gaultheria pro	1		2	1			2	1		2	2		2	1			2	3	2		1	2		1				1			1	1		
Hamamelis virg				2								1	1	1				2	2			1							1					
Maianthemum can	1	2		4	1	4	1	2	1	1	3	2	4	4	1	2		4	2	1	1	3	1	1	1	1	3		4	2	4	3	1	1
Melampyrum lin	2		1				2			1											2			1				1						
Osmorhiza clay		3		1	2	1			2			2			2	1				3					3		1			2	1	2	4	3
Polygala pau								2				1		1				2				1		1			1		1		1			
Pteridium aqui	3	1	4	1			4	2	1	3	3	1	2	2	1		4	3	2		4	3		4				3	2		2	1		
Rosa sp.	1		1				1			1	1		1				1											1						
Rubus sp.	1		2	2	1	1	2	2	1	1	2		2	2	1	1		2		1	1	1	1	1		1	4	1	3	2	3	2		1
Sanguinaria can		2			1				2														1		1	1				1			1	
Thalictrum dio				2	1			1			1		1																		1	1		
Vaccinium sp.	4		4	1			4	2		4	2		2	1			4	1	2		4	4		4			2	3	1		1	1		
Viburnum acer				1				2			1		2	2					3	1		2		1			2		2	1	3	2		
Waldstenia frag	1		1	1			2							1			1	1	2		2	2		3			1	2	2	1	1	1		

Plot number

Species	1	22	11	29	18	8	25	4	23	12	19	14	32	20	9	28	15	5	30	33	7	31	13	24	3	21	10	34	16	27	17	6	35	26
Maianthemum can	1	1	1			1	1		3	3	4	4	4	2	2	3	4	4	4	3	4	2	2	1	2	1	1	1	1	1	2	1	1	1
Aster mac	1	1	2	1	2	2	3	2	2	3	4	4	3	4	2	3	4	3	4	4	2	1	1	1	1	2	1	2	1	2	1	1	1	2
Corylus corn	3	3	2	4	3	4	2	3	2	3		2	2	2	3	2	1	4	2	3	1	2	1	2	1	1	1	2	1	1	2	1	1	1
Rubus sp.	1	1	1	1		2	1	2	1	2	2	2	3		2	4	2	2	3	2	1	2		1		1	1		1	1	1	1	1	
Amelanchier sp.	1	1		2	1		1	2	2		1	3	2	1	2	2	1	3	2	1		1		2	1	1	2	1	1	1	2	1	2	1
Vaccinium sp.	4	4	4	3	4	4	4	4	4	2	1	2	1	2	2	2	1	1	1	1														
Gaultheria pro	1	1	2	1	2	2	1	2	2	2	3	2	1	2	1		1	1		1														
Waldstenia frag	1	2		2	1	2	3	1	2		1		1	2		1	1	1	2	1		1												
Pteridium aqui	3	4	3	3	4	4	4	4	3	3	3	2	2	2	2		2	1	2	1			1		1		1		1					
Diervilla lon	1		1		1	1		2		2	1		2	2	1		2	2	1					1										
Aralia nud							1		1	1	2	1	2	1		2	2	3	3		2	2	1	2	2		1	2	3	1	1	1	1	1
Dryopteris spin				1					1	1	1	2	2		3	2		2	2		2	2		2		2	1	2	1	1	1	2	1	1
Clintonia bor								1		1		1		2	2	1	2		1	2		1	1		1		1		1	2	1				
Galium tri						1			1	1	2		1	1		1	1	1		1	1	2		1	2	1	2	1	1		2	2		1
Melampyrum lin	2	2	1	1		2	1	1																										
Epigaea rep	1	1	2	1	2	1	1	1		1	1			1																				
Comptonia per	4	4	4		3	3		3																										
Cladina sp.	1	2	2	1	1		1	2		1		1																						
Chimaphilla umb	1		2	1		2	1																											
Galium bor	1	1		1	1		1	1						1																				
Rosa sp.	1		1	1	1	1		1		1		1																						
Viburnum acer							1		2	1		2	3	3	2	2	2	1	2	2		1				1								
Polygala pau							1		1		2		1		2	1	1		1				1											
Desmodium glut									1	2		1		1	2	3	1		2	1		1			1									
Hamamelis virg									1		2	1		2			1	2	1				1											
Amphicarpa brac										1	1	2	1	1		1	3		2	1		1							1					
Thalictrum dio										1		1	1		1			2		1												1		
Osmorhiza clay													1			1		1		2	1	2	2		3	3	2	4	2		1	2	3	3
Caulophyllum thal																	1				2	1	1	1		2	1	1		1	1	2	2	
Arisaema tri																					2	1	1	1	2	1		1	1	2		1	1	1
Actaea rub															1			1	2		1	1	2	2	1	1	2	1	1	2	1	2		2
Sanguinaria can																						1		1	2		2	1		1		1		1
Allium tri																						2	2			1		1	1		1		1	1

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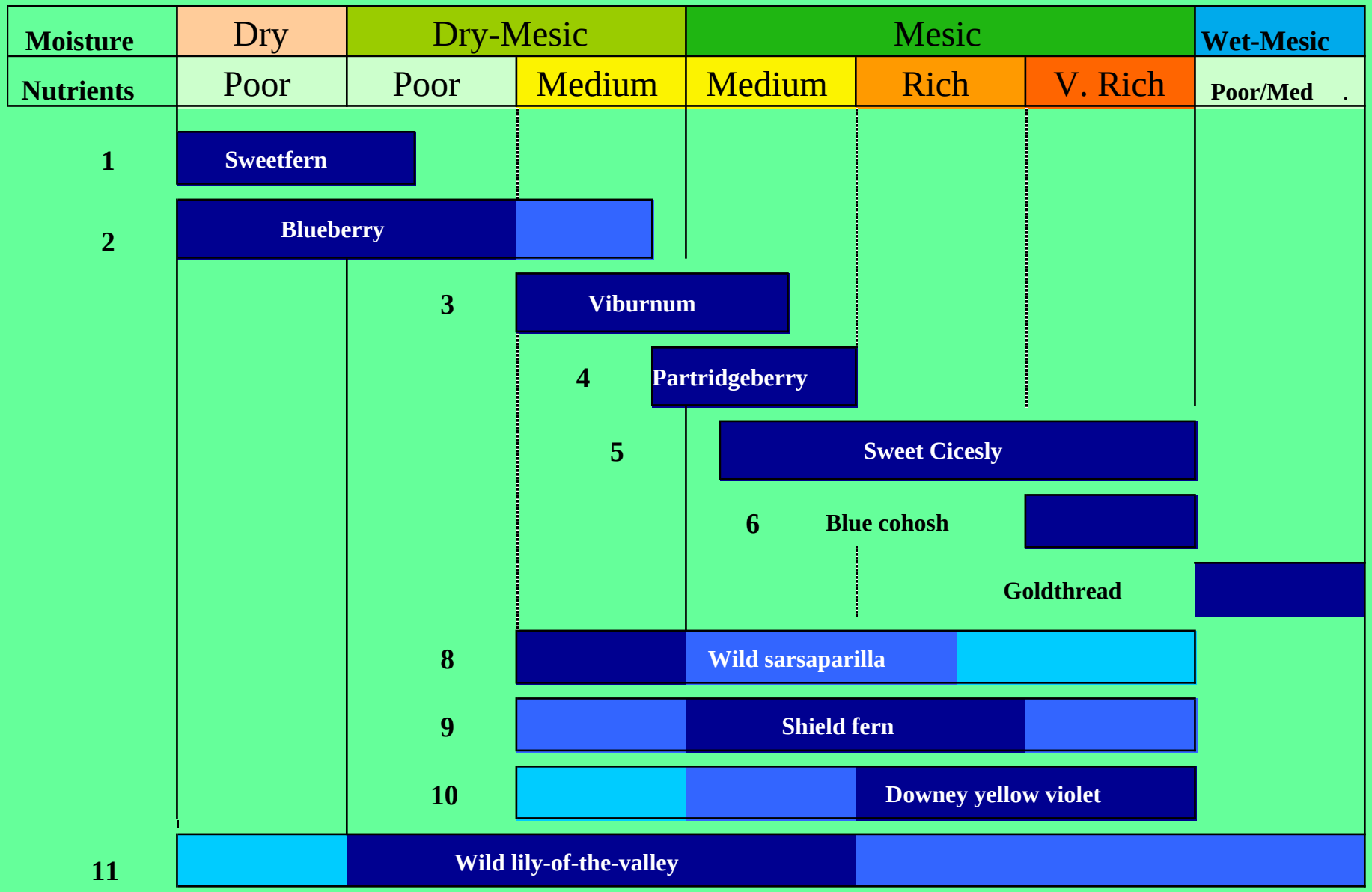
Ecological Species Groups of Northern Wisconsin's Upland Forests



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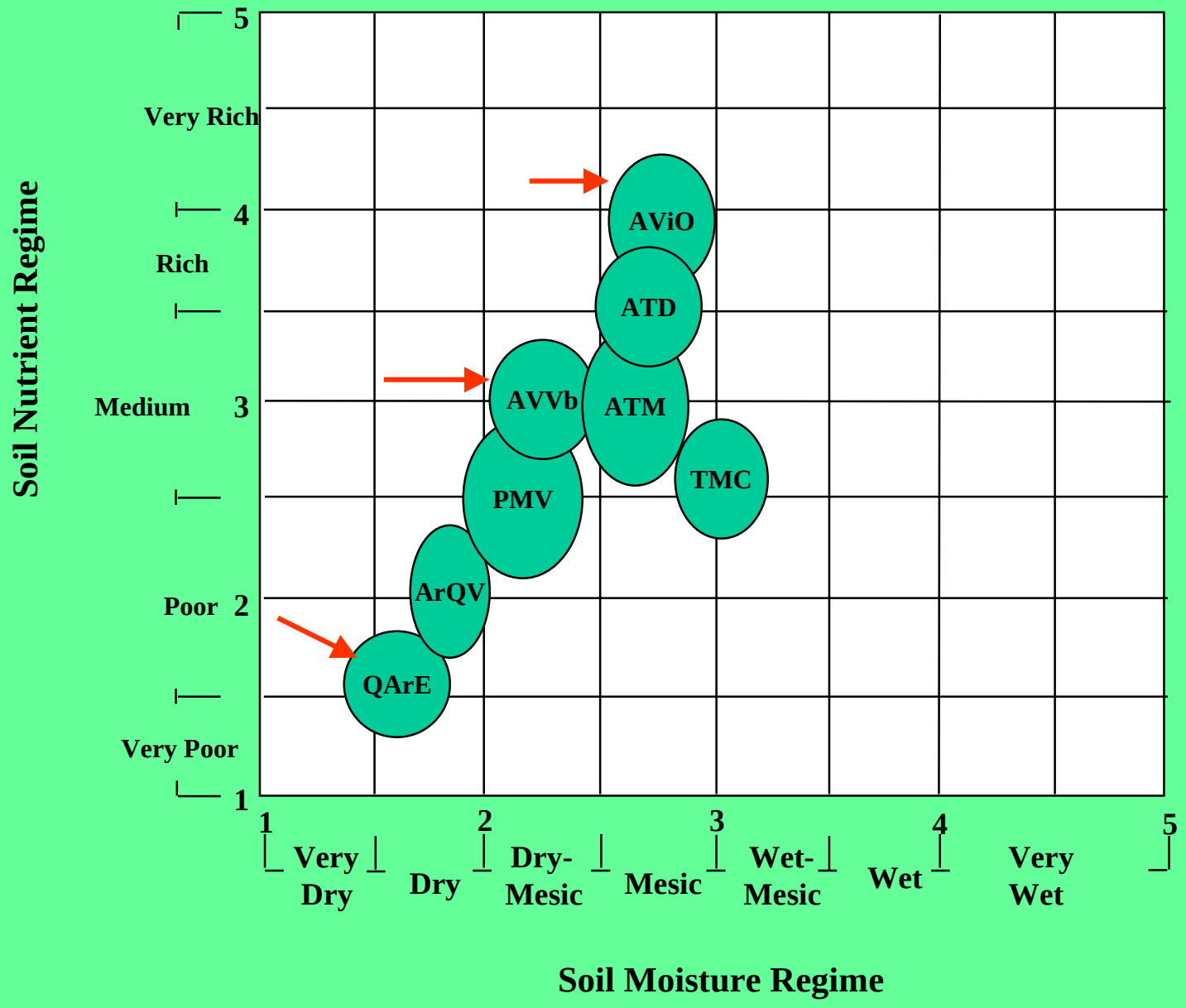
Habitat Types of Wisconsin's Region 3



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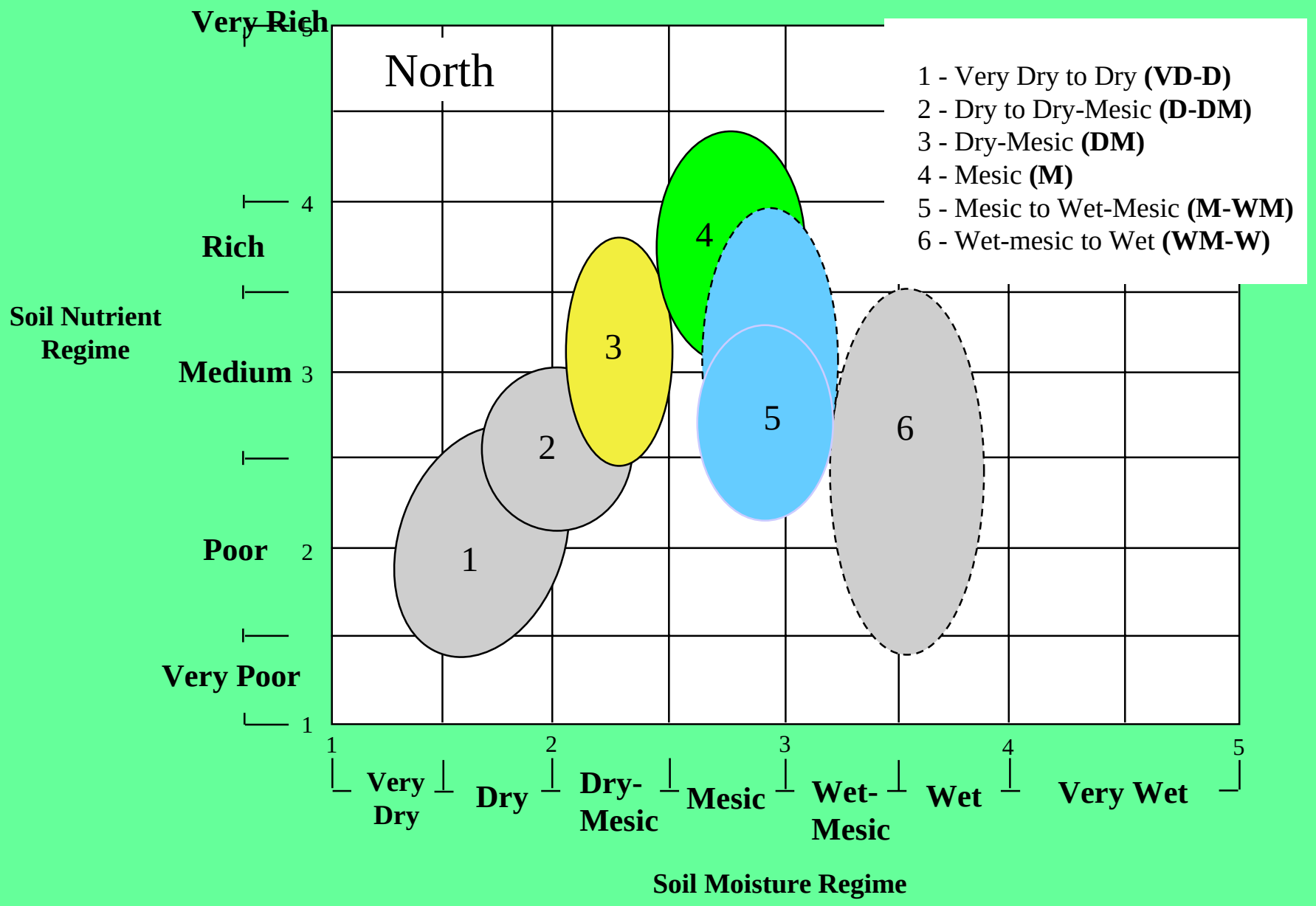
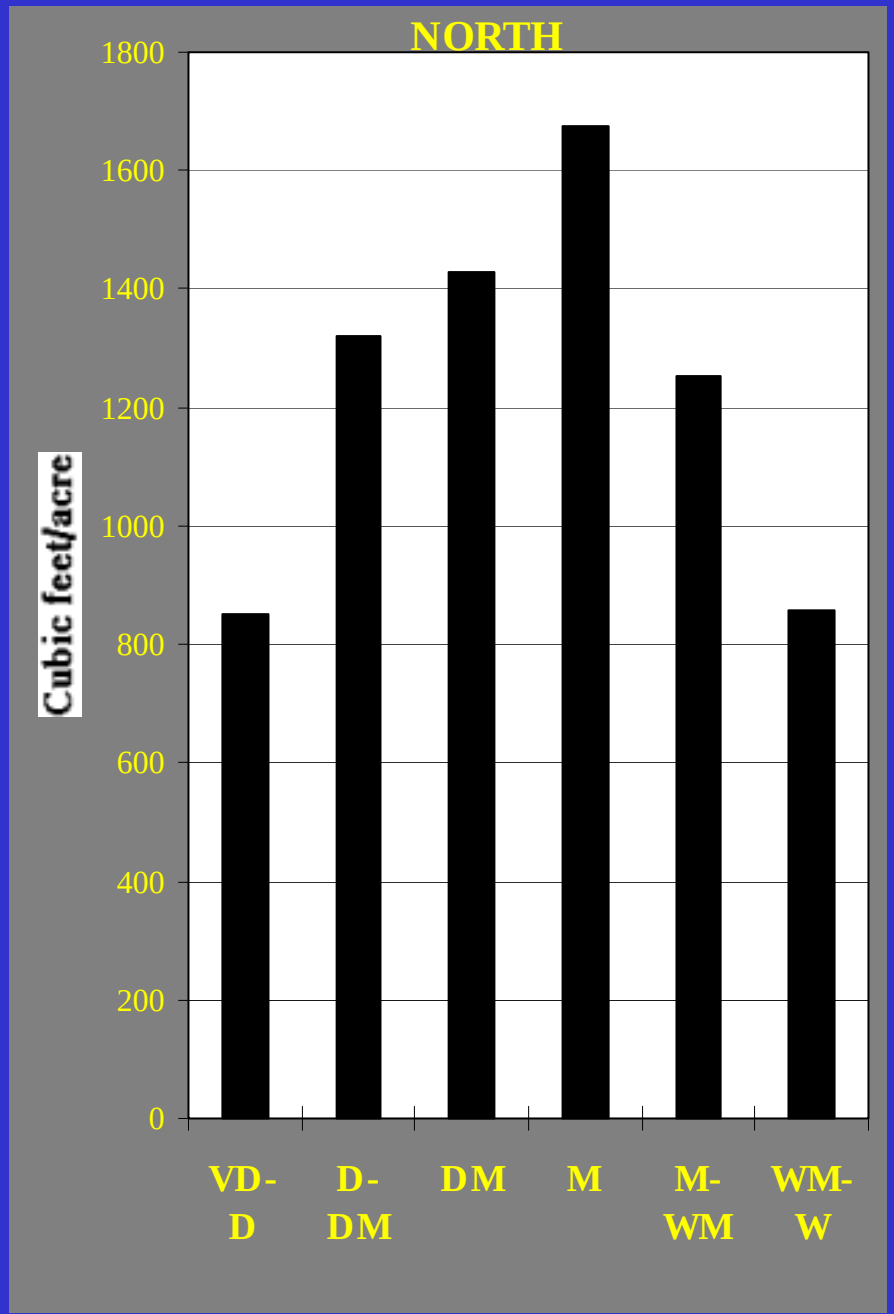
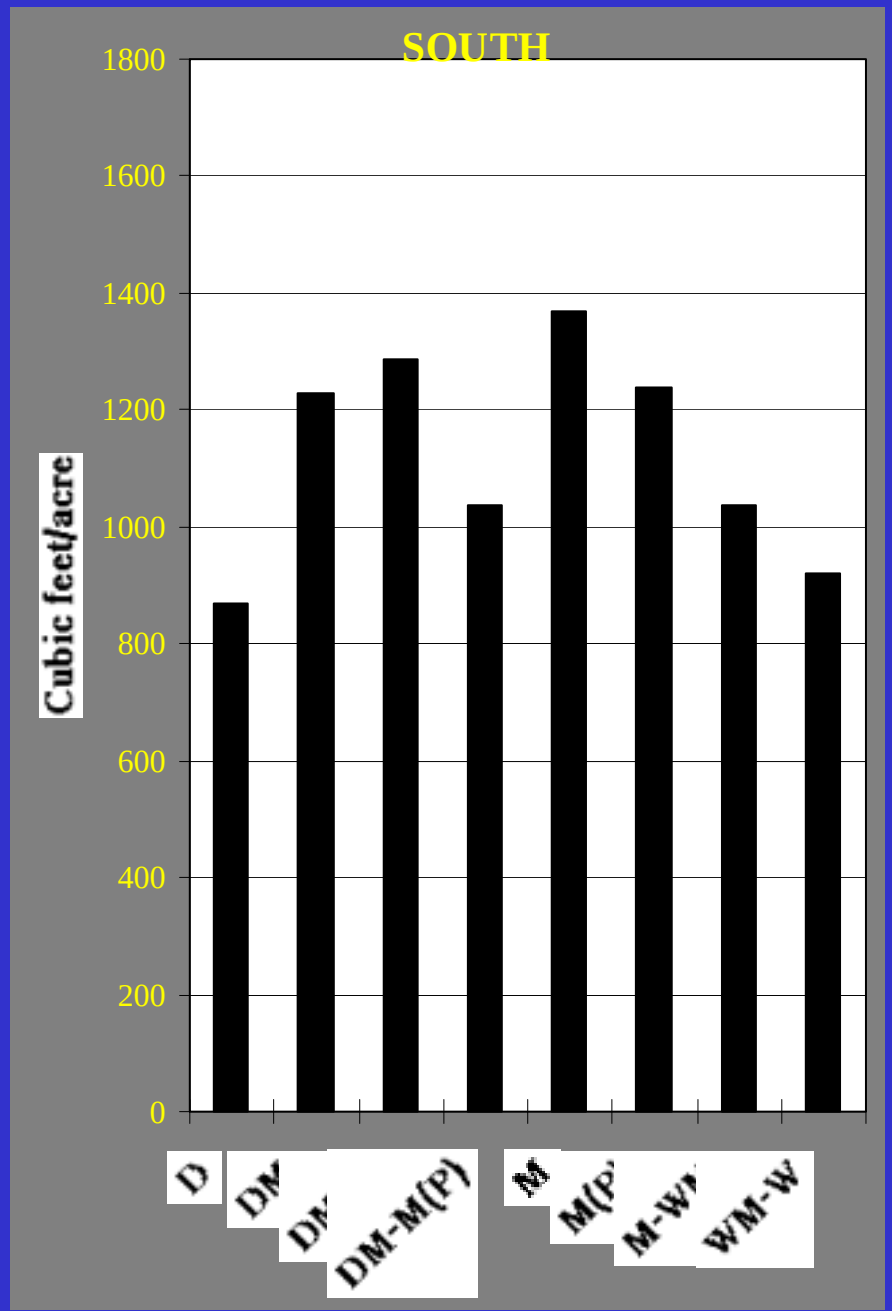

North
1 - Very Dry to Dry (VD-D)
2 - Dry to Dry-Mesic (D-DM)
3 - Dry-Mesic (DM)
4 - Mesic (M)
5 - Mesic to Wet-Mesic (M-WM)
6 - Wet-mesic to Wet (WM-W)
Soil Nutrient Regime
Very Rich
Rich
Medium
Poor
Very Poor
1
2
3
4
5
Very Dry
Dry
Dry-Mesic
Mesic
Wet-Mesic
Wet
Very Wet
Soil Moisture Regime

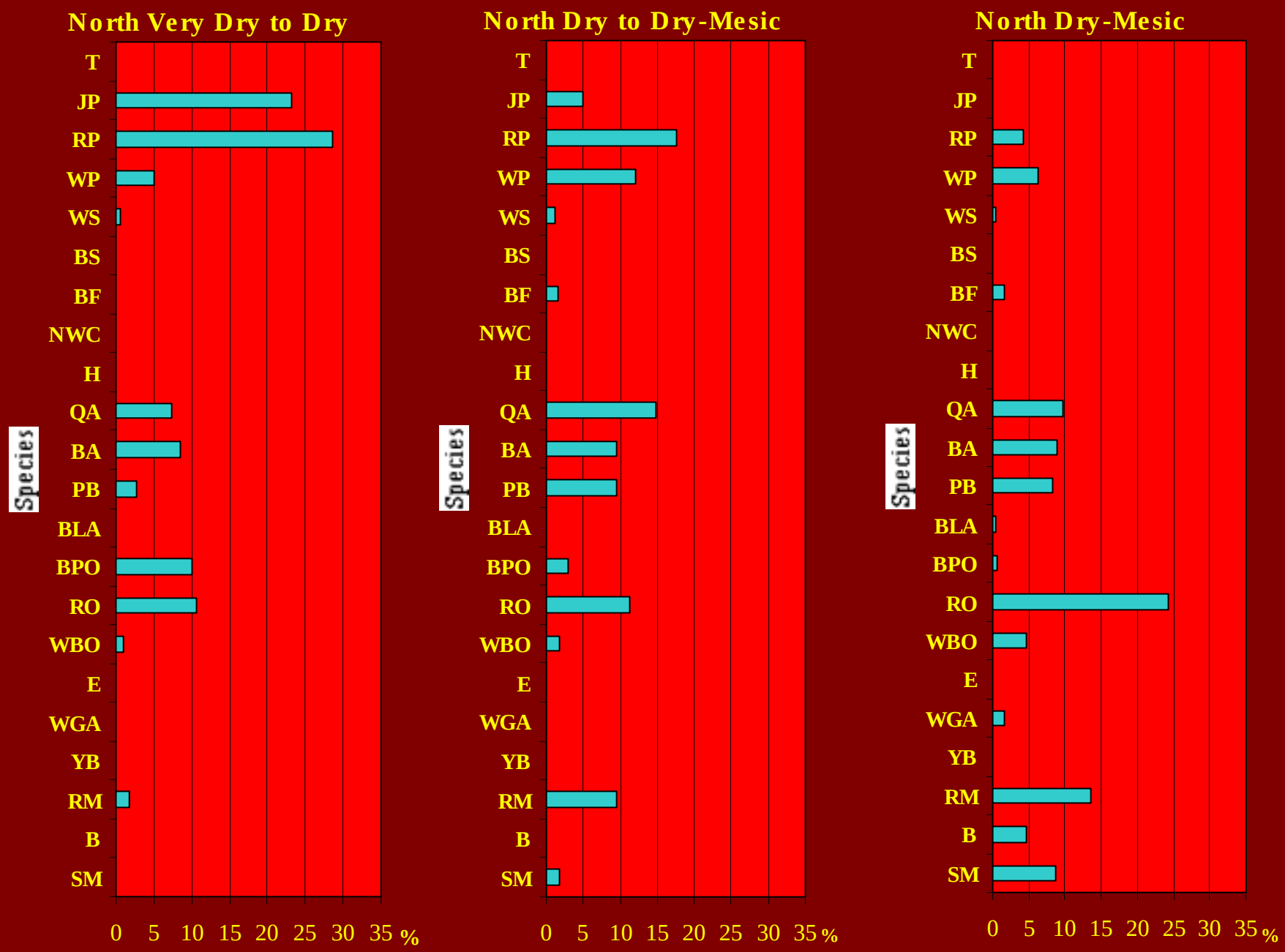
Growing Stock Volume per Acre by Habitat Type Group



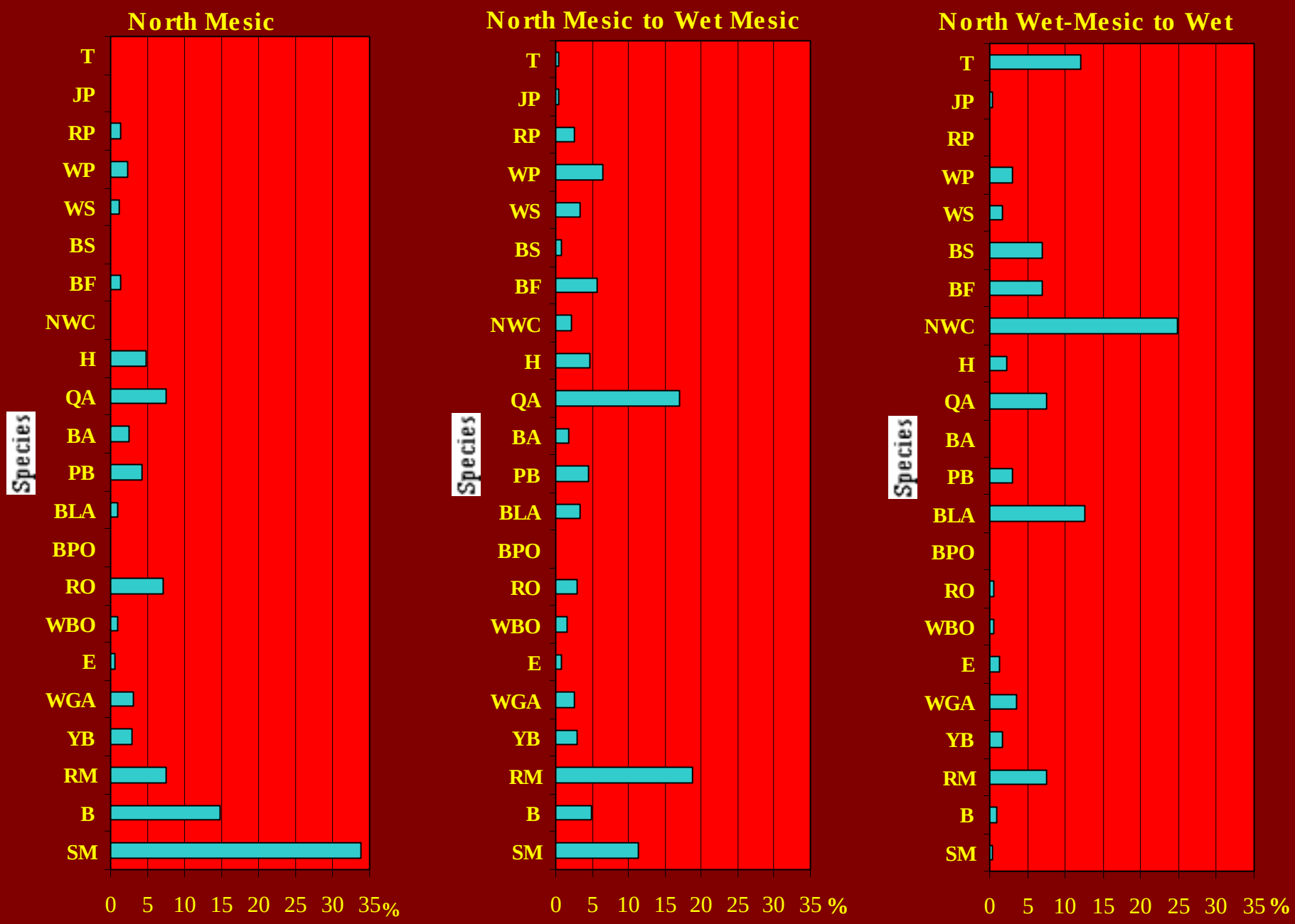


Average volume per tree (cubic feet) across habitat type groups						
	Very Dry to Dry	Dry to Dry-Mesic	Dry-Mesic	Mesic	Mesic to Wet-Mesic	Wet-Mesic to Wet
Jack Pine	5.6	6.9				
Red Pine	7.8	12.0	9.4	9.3		
B.T. Aspen	9.2	12.4	11.7	14.1	11.0	
Q. Aspen	5.6	7.7	8.6	9.2	8.1	7.5
Red Oak	7.3	10.3	14.6	19.6	15.9	
White Pine		18.3	22.8	43.2	28.1	19.9
Paper Birch		7.1	6.8	8.5	7.1	5.7
Red Maple		5.1	6.0	7.9	7.0	7.3
Sugar Maple			7.7	9.6	8.7	
Basswood			9.3	12.7	12.9	*
Yellow Birch				10.5	9.7	*
Hemlock				15.5	12.9	*
Balsam Fir				5.4	4.7	3.8
White Ash				11.2	9.8	8.8
N.W. cedar					6.8	5.2
W. Spruce					10.4	
Black Ash					6.6	5.6
Blk. Spruce						3.6
Tamarack						5.3

Species Composition of the Northern Habitat Type Groups as a Percent of the Total Group Volume

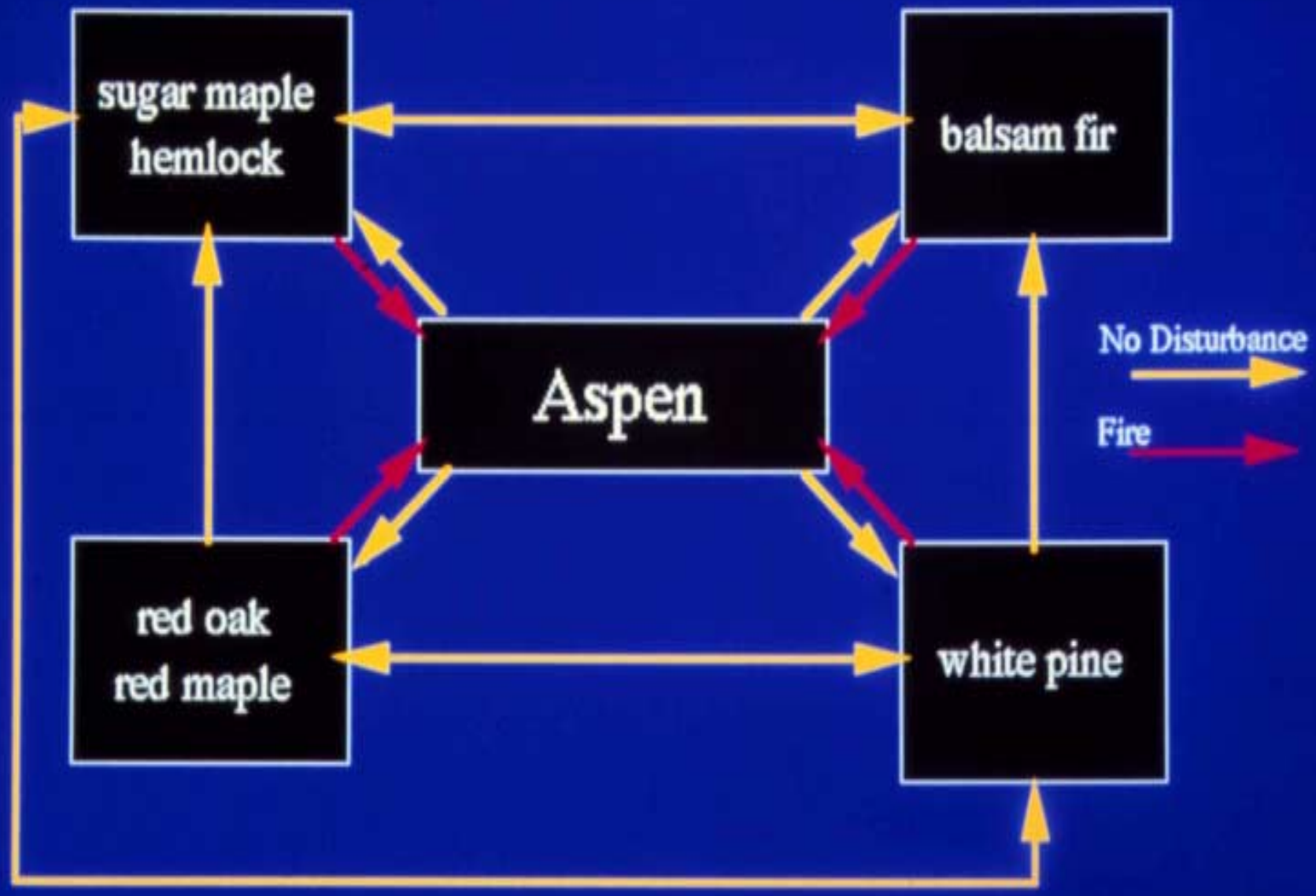


Species Composition of the Northern Habitat Type Groups as a Percent of the Total Group Volume



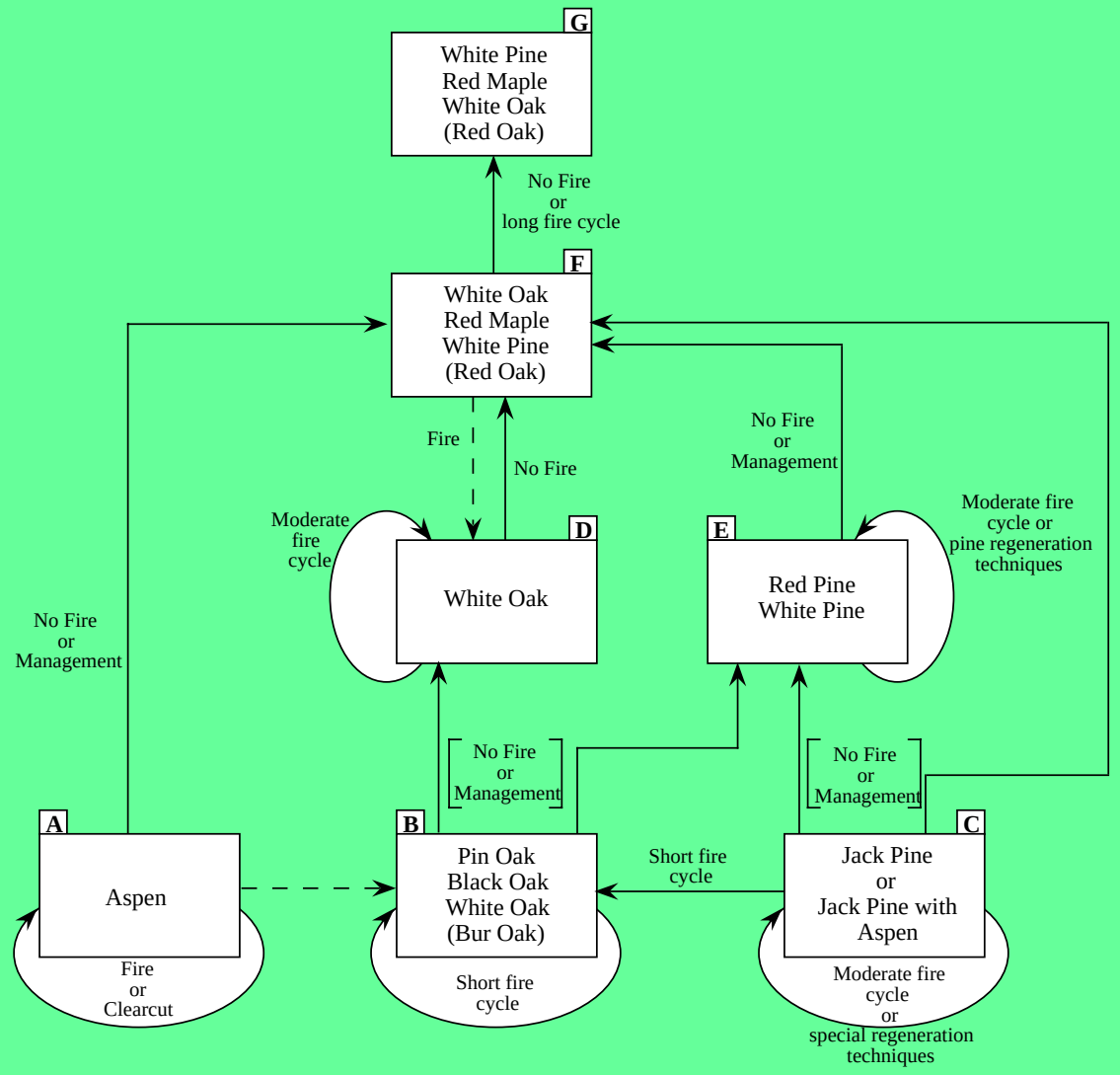
(John Kotar, University of Wisconsin-Madison)

Potential Successional Changes of an Aspen Stand



Forest Community Dynamics on Dry Sites

(with or without management)



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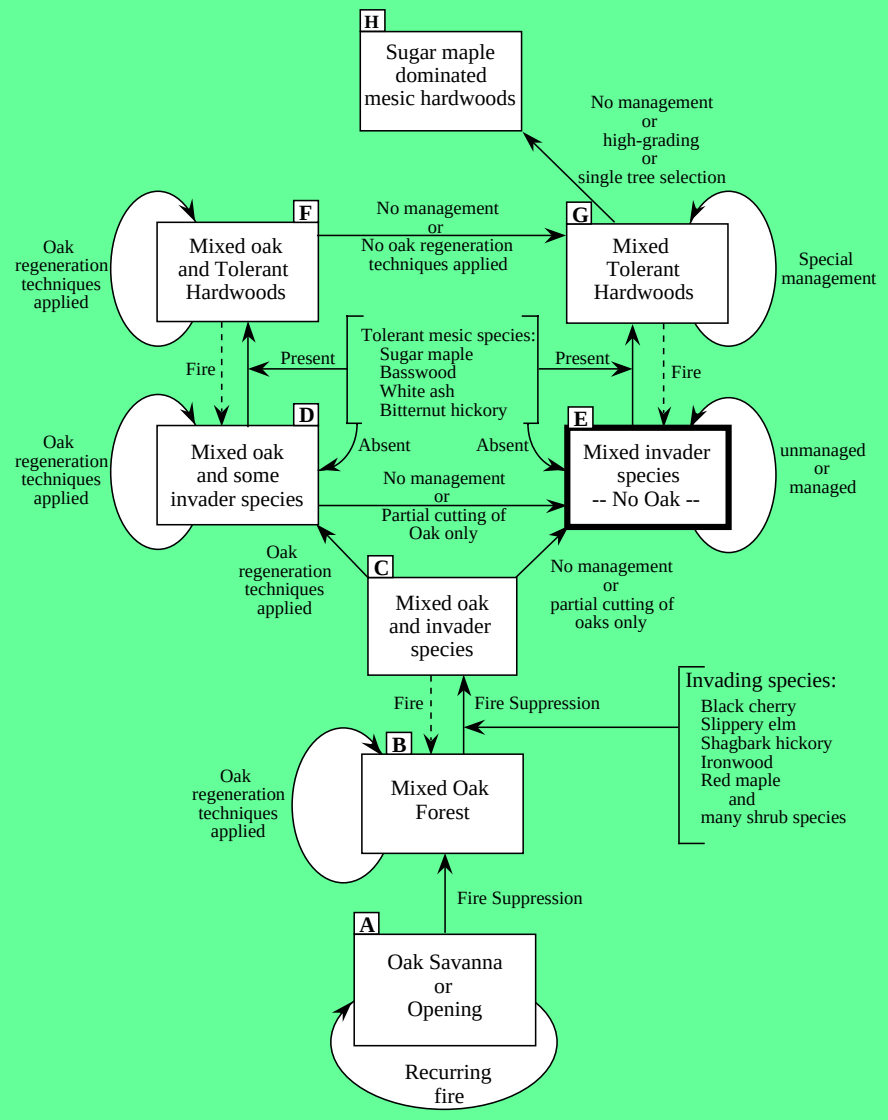
Forest Community Dynamics (with and without management) on Mesic and Dry-mesic Sites in Southern Wisconsin



John Kotar and Timothy Burger; Department of Forestry, University of Wisconsin-Madison

Forest Community Matrix for Baraboo Hills

(John Kotar, University of Wisconsin-Madison)

Habitat Type						
Successional Stage	**Size/age class**	**ArDe-V**	**AArL**	**ATiDe-Ha**	**ATiCa-Al**	**ATTr**
Early (30-50 yrs)	Large/ Old	**Aspen**	**Aspen**	**Aspen**	**Aspen**	**Aspen**
	Med./ Med.	**Pin oak Black oak**	**Red oak White oak**	**Basswood White ash**	**White ash Basswood**	**White ash**
	Small/ Young	**Red oak White oak White pine**	**Red maple White pine White oak**	**Red maple Basswood Sugar maple**	**White ash Basswood Sugar maple**	**Sugar maple Y. birch Hemlock**
Mid- (50-80 yrs)	Large/ Old	**Pin oak Black oak Aspen**	**Red oak White oak Aspen**	**Basswood White ash Aspen**	**White ash Basswood Aspen**	**Sugar maple Y. birch Aspen**
	Med./ Med.	**White pine Red oak White oak**	**Red maple White pine White oak**	**Basswood Red maple sugar maple**	**Sugar maple**	**Sugar maple Y. birch Hemlock**
	Small/ Young	**Red maple White oak White pine**	**Red maple Ironwood Sugar maple**	**Sugar maple Ironwood Basswood**	**Sugar maple Basswood Ironwood**	**Sugar maple Y. birch Hemlock**
Late (80+)	Large/ Old	**White pine Red oak White oak**	**Red oak White oak White pine**	**Sugar maple Basswood White ash**	**Sugar maple Basswood White ash**	**Sugar maple Y. birch Hemlock**
	Med./ Med.	**Red maple White pine White oak**	**Sugar maple Ironwood Red maple**	**Sugar maple Basswood Ironwood**	**Sugar maple Ironwood Basswood**	**Sugar maple Y. birch Hemlock**
	Small/ Young	**Red maple White oak White pine**	**Sugar maple Red maple Ironwood**	**Sugar maple Ironwood Basswood**	**Sugar maple Ironwood Basswood**	**Sugar maple Hemlock Y. birch**