Supplementary file S2 – Treatment and regeneration options

Table S2a. Treatment options. The variable abbreviations under the "Preconditions" sections are: SP – main species (S=spruce, P=pine, B=birch), SI – site index (m), A – age (yr), BA – basal area ($m^2 ha^{-1}$), N – trees per ha, HD – dominant height (m), LT – years since last thinning (yr), TC – number of thinnings in the current silvicultural cycle, VT – vegetation type (1,2 and 3: classified as hard, medium and easy natural regeneration from neighboring stands; 4: vegetation type good for natural regeneration by shelterwood establishment), AL – altitude (m). The parameter abbreviations for the treatment effect are: BA.r – ratio of the basal area left after treatment, N.l – number of trees left after treatment, D.r – the relative diameter ratio of the trees left after treatment, B.r – the proportion of broad leaves left after treatment. Est. – establishment.

Treatment	Preconditions										Effect			
	SP	SI	A	BA	N	HD	LT	TC	VT	AL	BA.r	N.l	D.r	B.r
Tending		<9.5			>1600	(2,8)						1400		0.1
		(9.5,15.5)			>1800	(2,8)						1600		0.1
		>15.5			>2000	(2,8)						1800		0.1
Shelterwood est.	S		(50,180)		>800	(16,26)	>10	1	4	<600		700		
	S				(310,800)	(18,30)	>20		4			300		
Shelterwood harvest					(100,200)		10				0			
Thinning by basal area	S, B			>15	>1000	(10,18)	>20	0			0.8		0.85	
	P			>12	>800	(10,18)	>10	0			0.7		0.85	
	P			>10	>600	(16,22)	>10	1, 2			0.8		0.9	
Seed trees est.	P	<9.5			(100,1200)	>18						50		
	P	(9.5,15.5)			(70,1200)	>14						30		
	P	>15.5			(40,1200)	>12						20		
Seed trees harvest							20		1, 2	<300	0			
					… (+2 definitions)									
							20	1, 2	3, 4	>300	0			
Harvest	S, P	>18.5	(50,130)			>10	0,1,2				0			
					… (+12 definitions)									
	B	<9.5	(100,150)			>10					0			

Table S2b. Regenerations options. There are a total of 134 regeneration definitions in GAYA 2.0. This is an abbreviated list to illustrate the different types of regenerations. The variables are SI – site index (m), VT – vegetation type (1,2 and 3: classified as hard, medium and easy natural regeneration from neighboring stands; 4: vegetation type good for natural regeneration by shelterwood establishment), AL – altitude (m). The effect of regeneration is defined as the number of plants from each species and their age in parentheses. Negative regeneration ages reflect a delay in natural germination. The regeneration type has the main species in parenthesis.

Regeneration type	Preconditions			Effect		
	SI	VT	AL	spruce	pine	birch
Planted (spruce)	>21.5	1	<600	1910 (0)	90 (0)	1200 (-8)
	… (+28 definitions)					
	<12.5	3, 4	>600	910 (0)	90 (0)	1300 (-12)
Planted (pine)	>15.5	1	<300	90 (0)	1510 (0)	900 (-8)
	… (+25 definitions)					
	<12.5	3, 4	>600	90 (0)	1510 (0)	700 (-12)
Planted (birch)	>18.5			0 (0)	0 (0)	2200 (0)
	… (+1 definitions)					
	<15.5			0 (0)	0 (0)	1800 (0)
Natural (spruce) by neighboring stands	>18.5	1	<600	1500 (-5)	100 (-5)	1750 (-5)
	… (+22 definitions)					
	<12.5	3	>600	900 (-18)	300 (-15)	2500 (-12)
Natural (spruce) by shelterwood			<600	2000 (-10)	100 (-15)	800 (-25)
			>600	2000 (-10)	100 (-15)	800 (-35)
Natural (pine) by seed trees	>15.5	1	<300	500 (-5)	1500 (-5)	900 (-5)
	… (+22 definitions)					
	<9.5	3, 4	>300	450(-20)	1350 (-15)	700 (-12)
Natural (birch) by neighboring stands	>18.5	1	<600	200 (-20)	200 (-15)	1600 (-8)
	… (+22 definitions)					
	<12.5	3, 4	>600	200 (-18)	200 (-15)	2000 (-12)