

A standardised approach towards selecting forests for strict protection in Germany

Supporting Online Material (SOM)

1 Methods

1.1 Data

Table 1 Indicators or criteria used to identify National Forest Inventory 2012 (NFI3) plots for different scenario types and the required NFI3 variables and files

Indicator / Criterion	NFI3 Variable	Description	NFI3 file(s)
Mean quadratic tree diameter / standard deviation of tree diameter	Bhd	Diameter at breast height [mm]	b3_baeume
Standard deviation of tree height	Hoehe	Tree height [dm]	b3_baeume
Flower-diversity (diversity of fruiting and flowering trees)	Ba	Tree species	b3_baeume, x_ba3
	Alkl5	Age class (5 years) at the time of recording	b3_baeume, y_BaAlkl5
Bark-diversity (to describe diversity of bark types)	Ba	Tree species	b3_baeume, x_ba3
	Bhd	Diameter at breast height [mm]	b3_baeume
Volume per hectare of trees with a DBH > 40 cm	N_ha	Estimated represented stem count per hectare for stand-internal analysis	b3_baeume
	Bhd	Diameter at breast height [mm]	b3_baeume
Number of decay classes	Tzg	Decomposition level of deadwood	b3_tot
Deadwood	Tart	Deadwood type	b3_tot; x_tart
	Tmd	Mid-diameter / stump diameter of deadwood [cm]	b3_tot
Richness of tree species	Ba	Tree species	b3_baeume, x_ba3
Stocking types	BestockTypFein	Stocking (fine) type for main stand	b3_bestock, x_BestockTypFein
Development stages of forest stand	Phase	Developmental phase	b3_bestock
Canopy layers	BestockAb	Stand structure	b3_bestock, x_BestockAb
Age classes of forest stands	Alkl5	Age class (5 years) at the time of recording	b3_baeume, y_BaAlkl5

Naturalness	natNaehe	Naturalness of main stand	b3_bestock, x_Naturnaehe
Rare natural forest communities	NatWG	Natural forest community	b3_def_banwg, x_natwg
Assessment of conservation status of forest habitat types after Thünen	Tot_ABC	ABC grade of the conservation status of forest habitat types	b3_wlt
Legal protection status	FFH, Biosphaere, LSG, NationalP, Natura_jn, NaturP, NaturSG, VogelSG	Fora-Fauna-Habitat site, Biosphaere reserve, Landschaftsschutzgebiet, Nationalpark, Naturpark, Naturschutzgebiet, Vogelschutzgebiet	b3_ecke_raum
Public forests	Eg	Ownership type	b3_ecke_w, x_eg

1.2 Forest habitat types that require no human intervention

Table 2 Forest habitat types, their Natura-2000-Code, and necessary conservation measures related to forestry management (after Entenmann & Schaich, 2014)

Conservation measures	Code	Forest habitat type
Not required for use / maintenance.	9110	Luzulo-Fagetum beech forests
	9130	Asperulo-Fagetum beech forests
	9140	Medio-European subalpine forests
	9150	Medio-European limestone beech forests
	9190	Old acidophilous oak woods
	91E0	Alluvial forests
	9410	Acidophilous Picea forests
	9420	Alpine Larix decidua and/or Pinus cembra forests
Suspension of forestry use is recommended, as it is partially re- quired, unprofitable, or endangered	91F0	Riparian mixed forests
	91G0	Pannonic forests
	91T0	Central European Lichen-Pine Forests
No management or care is necessary for primary stands. Secondary stands, on the other hand, require	9160	Stellario-Carpinetum
	9170	Galio-Carpinetum oak-hornbeam forests
	9180	Tilio-Acerion forests

targeted management or forestry practices.	91D0	Bog woodland
	91U0	Pine forests of the Sarmatic Steppe
A part of the stands originated from historical land use practices and requires management, possibly including the resumption of forest grazing	9120	Sour beech forest (undergrowth of holly/yew)

1.3 Forest Structure Index and analysis

Table 3 Structure indicators used in the Forest Structure Index (FSI) by Storch et al. (2018) and their recognised significance for forest biodiversity

Indicator short	Indicator long	Explanation
DBHq	Quadratic mean diameter of trees 7 cm at breast height	Common indicator for stand structure, higher DBHq means older, taller stands with more biomass, typical forest microclimate, and mature forest attributes.
DBH sd	Standard deviation of diameter at breast height of trees 7 cm	High DBH sd implies diverse stand structure with varied niches and canopy layering
Heisd	Standard deviation of mean height of trees 7 cm DBH	Directly describes vertical heterogeneity and relates to canopy layering.
Bark	Bark index to describe diversity of bark types	Diverse bark types in forest stands create varied habitats for many species; depends on tree diameter and bark development phases.
Fruit	Fruit diversity of fruiting and flowering trees	Food source for nectar and fruit- eating animals.
VolTrees40	Volume per hectare of trees with a DBH 40 cm	Large trees serve as habitat and food sources for many species and are more likely to provide micro- habitats such as hollows.
N DC	Number of decay classes	Indicates natural forest conditions and continuous recruitment of deadwood, important for many taxa.
St deadwood	Mean DBH of standing deadwood	Important habitat and food source for many xylobiotic species.
Dw deadwood	Average mean diameter of downed deadwood	Important habitat and food source for many xylobiotic species.

SR	Richness of tree species with DBH 7 cm	Important for diversity of dependent species, particularly host- specific herbivores, detritivores, symbionts, and pathogens.
SR Reg	Species richness of regeneration (DBH < 7 cm)	High SR Reg leads to diverse future stand conditions.

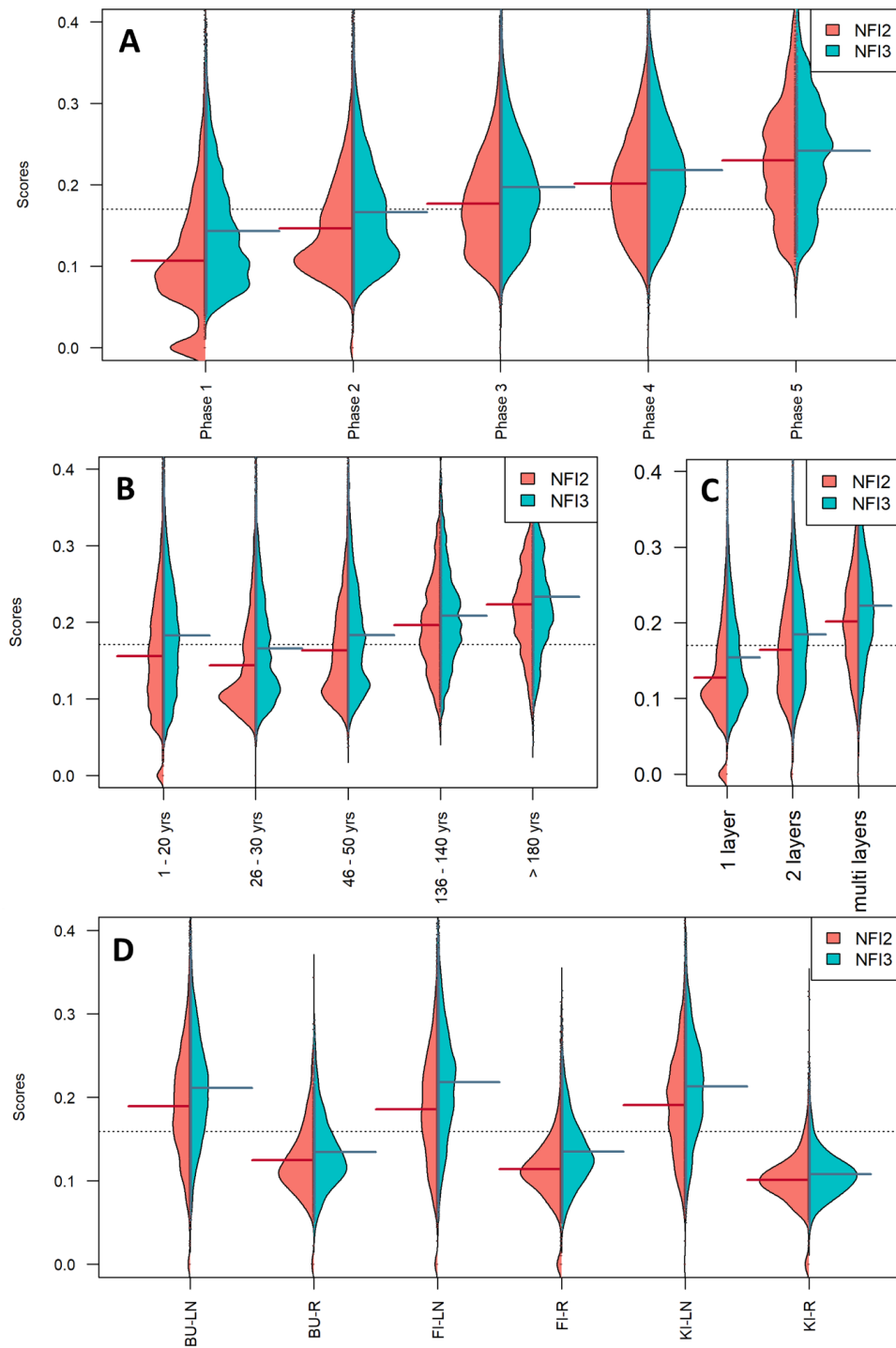


Fig. 1 Forest Structure Index (FSI) score distributions for different National Forest Inventory 2012 (NFI3) classifications, horizontal lines indicate mean values of forest types. A: FSI scores for development phases, B: age classes, C: canopy layers and D: FSI scores for six different stocking types. BU-LN = beech in mixed stand with broadleaved and coniferous trees; BU-R = beech in pure stand; FI-LN = spruce mixed stand with broadleaved and coniferous trees; FI-R = spruce in pure stand; KI-LN = spruce mixed stand with broadleaved and coniferous trees; KI-R = pine in pure stand. Differences between National Forest Inventory 2002 (NFI2) and NFI3 and between different forest types are statistically significant, except for the differences between BU-LN - KI-LN and BU-R - FI-R

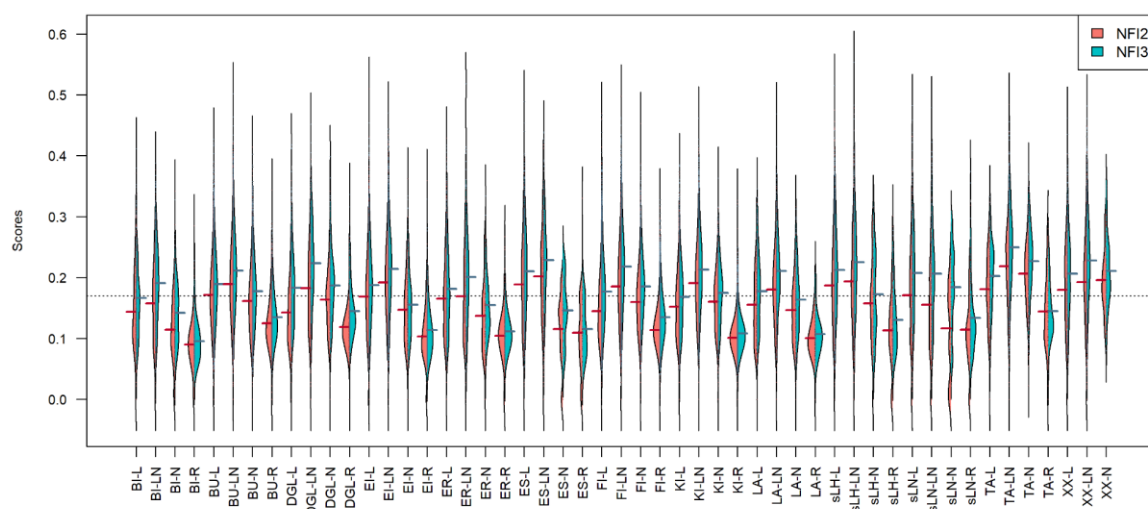


Fig. 2 Forest Structure Index (FSI) score distributions for all different stocking types in the National Forest Inventory 2012 (NFI3) and National Forest Inventory 2002 (NFI2). Horizontal lines indicate mean values of forest types

1.4 Scenario 'Habitat Conservation'

Table 4 Short definitions of nature conservation criteria for the selection and evaluation of strictly protected forest area, based on Schultze et al. (2014) and Engel et al. (2016)

Group	Criterion	Short definition
Function	Naturalness	Describes the similarity of tree species composition of the current forest stand to the forest stand in its natural state
	Rarity	Describes forest types if they occur with low frequency or over a small area in a reference area
	Threat	Means the risk of ecosystems or species to extinction
	Representativeness	Indicates that an area includes the variation of all sites and forest types at all different stages of development
Time	Habitat continuity	Temporal continuity of a forest stand in terms of its tree species composition, deadwood supply, and structure - includes old-growth forest and ancient forests
	Persistence	Refers to an area´s legal protection status and therefor the possibility that it will continue to grow naturally
Space	Completeness	Includes all of the ecosystem´s characteristic states, processes, and related functions
	Connectivity	Describes the spatial connections between areas that support and facilitate the movement of species and genes between habitats and communities

Table 5 Rare natural forest communities with a proportion of less than 1% of forested area in Germany. Information about the associated tree species of potentially natural forest communities of the National Forest Inventory 2012 (NFI3) can be found in the file 'b3_def_banwg,' and information about the NFI3 code of the natural forest community can be found in the file 'x_natwg'

NFI3 Code	Natural forest community
8	Fago-Piceetum
9	Aceri-Fagetum
10	Luzulo-Abietetum
11	Galio rotundifolii-Abietetum
13	Pyrolo-Abietetum
16	Vaccino vitis idae-Quercetum und Leucobryo-Pinetum
19	Querco-Tilietum
20	Quercion pubescenti-petreae, Carpinion p.p.
21	Erico-Pinetum
23	Adoxo-Aceretum
24	Lunario-Acerenion p.p., Tilienion platyphylli
25	Alnetum viridis
26	Betula carpaticae-Sorbetum
27	Asplenio-Piceetum
28	Bazzanio-Piceetum
29	Calamagrostio villosae-Piceetum
30	Homogyno-Piceetum
33	Piceo-Vaccinienion
35	Pruno-Fraxinetum
36	Carici remotae-Fraxinetum
37	Stellario-Alnetum
38	Alnetum incanae
39	Querco-Ulmetum
40	Salicetum albae

1.5 Scenario ‘Old Forests’

Table 6 Age classes exceeding typical rotation periods (WEHAM baseline scenario 2012) by tree species groups as basis for defining 'old-growth forests' (Dieter et al., 2020)

Tree species	Typical rotation period
Oak	160
Beech	140
Spruce	100
Pine	120

1.6 Selection of candidate NFI3 plots

Table 7 Forest area calculations based on the National Forest Inventory 2012 (NFI3)

Total forest area	11,292,669 ha	
Forest area under strict protection	Area	210,553.8 ha
	Percentage	1.86%
Forest area excluding the area under strict protection	Area	1,1082,115 ha
	Percentage	98.14%
Forest area under strict protection and only forest habitat types where no intervention is needed for preservation	Area	1,720,884 ha
	Percentage	15.24%
Remaining forest area to reach the 5% target	Area	354,590 ha
	Percentage	3.14%
Remaining forest area to reach the 10% target	Area	919,223 ha
	Percentage	8.14%
Remaining forest area to reach the 30% target	Area	3,177,757 ha
	Percentage	28.14%

Table 8 Representative forest area per National Forest Inventory 2012 (NFI3) plot per federal state

Federal state	Forest area [ha]	NFI3 plots	Representative forest area per NFI3 plot [ha]
Baden-Württemberg BW	1353043	12443	108.74
Bayern BY	2492436	6900	361.22
Berlin	15776	36	438.22
Brandenburg BB	1034252	2389	432.92
Bremen	436	7	62.26
Hamburg	4270	5	854
Hessen HE	841562	1962	428.93
Mecklenburg-Vorpommern MV	495207	4808	102.20
Niedersachsen NI	1032694	3407	303.12
Nordrhein-Westfalen NW	845939	1842	459.25
Rheinland-Pfalz RP	807783	7584	106.51
Saarland SL	87481	230	380.35
Sachsen SN	494914	2285	216.60
Sachsen-Anhalt ST	460769	1064	433.05
Schleswig-Holstein SH	162582	1506	107.96
Thüringen TH	540752	2035	265.73

2 Results

2.1 Selection probability of NFI3 forest plots across scenarios

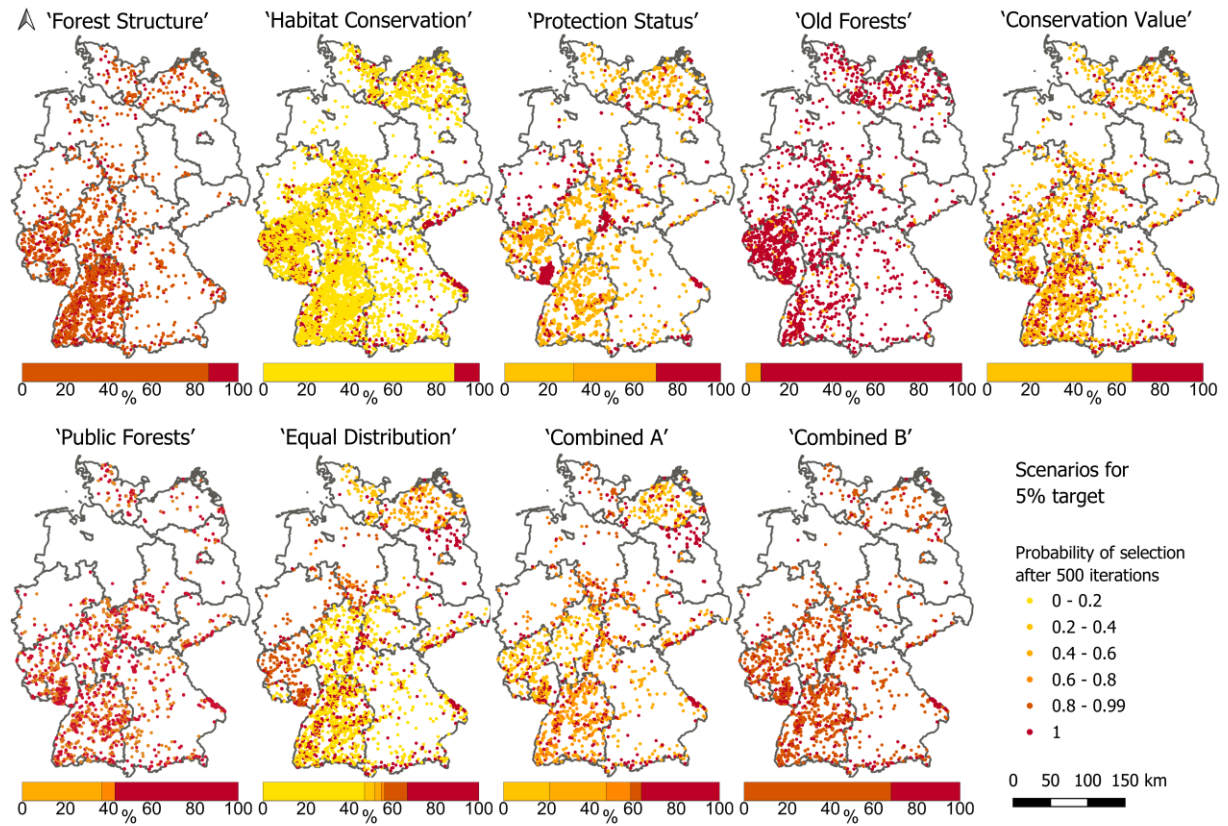


Fig. 3 Probability of selection for NFI3 plots after 500 iterations for the 5% target of forest area to be strictly protected. The colour gradient indicates the probability interval of the NFI3 plots, ranging from red (probability of selection = 1) to yellow (probability for selection ≤ 0.2). The percentage bars show the contribution of newly selected plots from each probability interval to the total number of newly selected plots. Only plots that fulfil at least one criterion of each respective scenario are displayed on the maps. The plot distribution shown does not represent actual forest area coverage

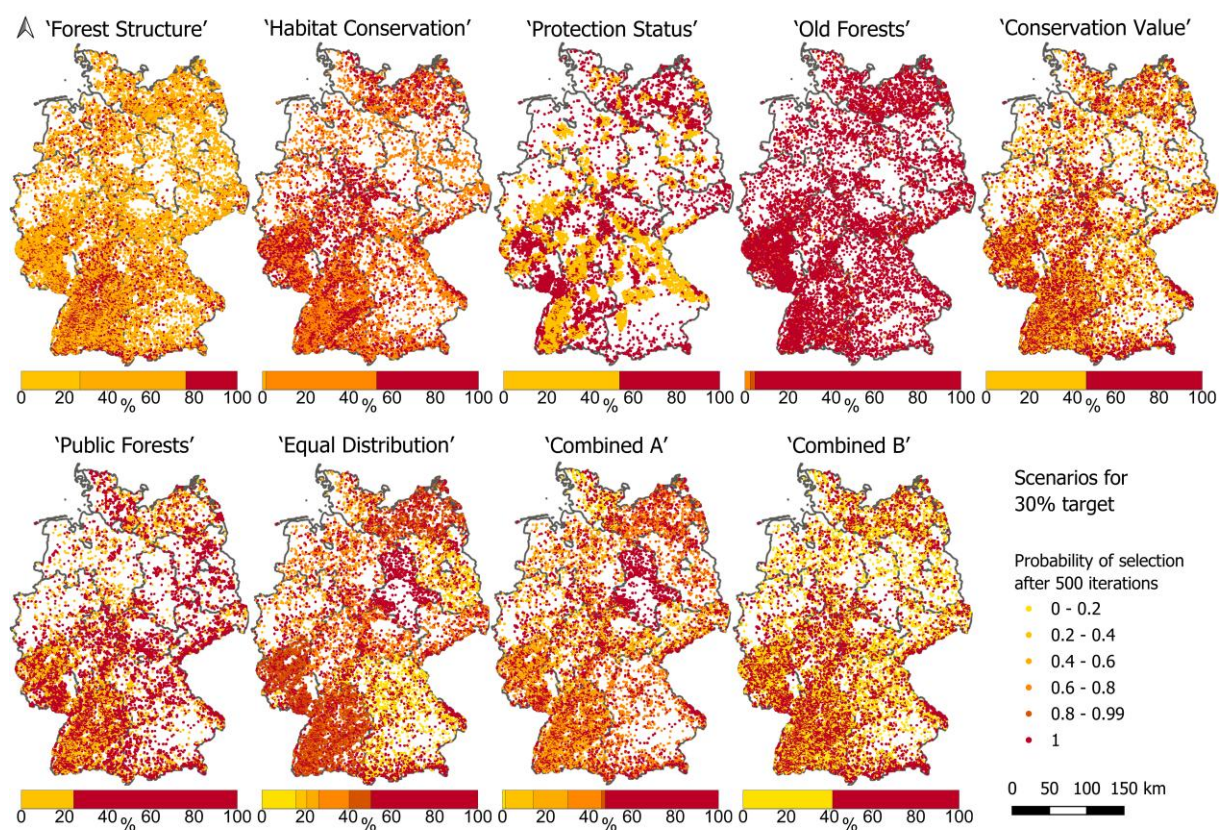


Fig. 4 Probability of selection for NFI3 plots after 500 iterations for the 30% target of forest area to be strictly protected. The colour gradient indicates the probability interval of the NFI3 plots, ranging from red (probability of selection = 1) to yellow (probability for selection ≤ 0.2). The percentage bars show the contribution of newly selected plots from each probability interval to the total number of newly selected plots. Only plots that fulfil at least one criterion of each respective scenario are displayed on the maps. The plot distribution shown does not represent actual forest area coverage

Table 9 Scenario 'Forest Structure'. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	359656.14
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	0	0	0	
	0.8-0.99	1779.00	310345.32	86.29	
	1	303.00	49310.81	13.71	
10%	0-0.2	0	0	0	1161341.89
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	4364.00	801685.76	69.03	
	0.8-0.99	0	0	0	
	1	2082.00	359656.14	30.97	
30%	0-0.2	0	0	0	5779630.24
	0.2-0.4	8125.00	1571885.31	27.20	
	0.4-0.6	14561.00	2830377.37	48.97	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	7679.00	1377367.56	23.83	

Table 10 Scenario 'Habitat Conservation'. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	7045.00	1300827.18	88.40	1471502.75
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	0	0	0	

	0.8-0.99	0	0	0	
	1	882.00	170675.57	11.60	
	0-0.2	0	0	0	
	0.2-0.4	0	0	0	
10%	0.4-0.6	6228.00	1158432.72	78.72	1471502.75
	0.6-0.8	817.00	142394.46	9.68	
	0.8-0.99	0	0	0	
	1	882.00	170675.57	11.60	
	0-0.2	0	0	0	
	0.2-0.4	0	0	0	
30%	0.4-0.6	364.00	67790.34	1.73	3923871.97
	0.6-0.8	10620.00	2005655.61	51.11	
	0.8-0.99	0	0	0	
	1	9755.00	1850426.01	47.16	

Table 11 Scenario ‘Protection Status’. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
	0-0.2	0	0	0	
	0.2-0.4	1202.00	195140.38	32.01	
5%	0.4-0.6	1327.00	232079.27	38.07	609552.61
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	923.00	182332.96	29.91	
	0-0.2	0	0	0	
	0.2-0.4	0	0	0	
10%	0.4-0.6	162.00	29536.29	2.69	1097547.95
	0.6-0.8	2395.00	458459.05	41.77	
	0.8-0.99	0	0	0	
	1	3452.00	609552.61	55.54	

30%	0-0.2	0	0	0	4941858.84
	0.2-0.4	12583.00	2652313.58	53.67	
	0.4-0.6	20.00	4686.94	0.09	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	12740.00	2284858.32	46.23	

Table 12 Scenario ‘Old Forests’. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	366535.99
	0.2-0.4	0	0	0	
	0.4-0.6	156.00	25405.25	6.93	
	0.6-0.8	1.00	397.01	0.11	
	0.8-0.99	0	0	0	
	1	1824.00	340733.73	92.96	
10%	0-0.2	0	0	0	1720884.47
	0.2-0.4	6641.00	1184077.08	68.81	
	0.4-0.6	459.00	83770.25	4.87	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	2483.00	453037.15	26.33	
30%	0-0.2	0	0	0	3207953.02
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	428.00	78087.34	2.43	
	0.8-0.99	384.00	71847.62	2.24	
	1	15768.00	3058018.07	95.33	

Table 13 Scenario 'Conservation Value'. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	636760.02
	0.2-0.4	2366.00	427341.33	67.11	
	0.4-0.6	3.00	399.92	0.06	
	0.6-0.8	5	0	0	
	0.8-0.99	0	0	0	
	1	1116.00	209018.77	32.83	
10%	0-0.2	0	0	0	1280849.29
	0.2-0.4	149.00	28427.43	2.22	
	0.4-0.6	3377.00	615661.83	48.07	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	3485.00	636760.02	49.71	
30%	0-0.2	0	0	0	4604022.83
	0.2-0.4	11418.00	2132981.57	46.33	
	0.4-0.6	6.00	1394.16	0.03	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	13381.00	2469647.10	53.64	

Table 14 Scenario 'Public Forests'. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	433343.85
	0.2-0.4	0	0	0	
	0.4-0.6	826.00	159541.84	36.82	
	0.6-0.8	126.00	26320.23	6.07	

	0.8-0.99	0	0	0	
	1	1249.00	247481.77	57.11	
	0-0.2	3177.00	606912.71	40.93	
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
10%	0.6-0.8	0	0	0	1482743.57
	0.8-0.99	0	0	0	
	1	4464.00	875830.86	59.07	
	0-0.2	0	0	0	
	0.2-0.4	5502.00	986343.04	24.26	
	0.4-0.6	0	0	0	
30%	0.6-0.8	0	0	0	4066389.04
	0.8-0.99	0	0	0	
	1	15756.00	3080046.00	75.74	

Table 15 Scenario ‘Equal Distribution’. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
	0-0.2	1382.00	278022.24	47.07	
	0.2-0.4	196.00	27711.04	4.69	
	0.4-0.6	178.00	17684.07	2.10	
5%	0.6-0.8	26.00	9503.90	1.61	589242.97
	0.8-0.99	315.00	62035.79	10.50	
	1	946.00	195750.91	33.14	
	0-0.2	1181.00	233466.58	15.87	
	0.2-0.4	890.00	121474.37	8.26	
	0.4-0.6	2807.00	465370.28	31.64	
10%	0.6-0.8	230.00	88390.67	6.01	1470802.50
	0.8-0.99	128.00	50903.99	3.46	
	1	2741.00	511196.61	34.76	

30%	0-0.2	2035.00	671931.82	15.77	4260369.33
	0.2-0.4	573.00	215308.85	5.05	
	0.4-0.6	873.00	233430.20	5.48	
	0.6-0.8	2651.00	601052.14	14.11	
	0.8-0.99	4281.00	430899.98	10.11	
	1	10035.00	2107746.34	49.47	

Table 16 Scenario 'Combined A'. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	434887.90
	0.2-0.4	566.00	92415.94	21.25	
	0.4-0.6	561.00	114230.66	26.27	
	0.6-0.8	294.00	49203.28	11.31	
	0.8-0.99	85.00	21758.02	5.00	
	1	742.00	157280.01	36.17	
10%	0-0.2	4473.00	802480.55	44.60	1799294.93
	0.2-0.4	421.00	109642.03	6.09	
	0.4-0.6	412.00	98207.01	5.46	
	0.6-0.8	262.00	51099.00	2.84	
	0.8-0.99	208.00	20725.30	1.15	
	1	3678.00	717141.05	39.86	
30%	0-0.2	477.00	56516.93	1.39	4073456.07
	0.2-0.4	1812.00	526749.16	12.93	
	0.4-0.6	5055.00	650644.55	15.97	
	0.6-0.8	2529.00	633434.12	15.55	
	0.8-0.99	210.00	73427.75	1.80	
	1	11270.00	2132683.56	52.36	

Table 17 Scenario ‘Combined B’. Number and area of selected NFI3 plots for probability intervals after 500 selection iterations

Target proportion of protected forest area	Probability interval	Number of selected NFI3 plots	Area of selected NFI3 plots (ha)	Percentage of NFI3 plot area (%)	Total NFI3 plot area selected (ha)
5%	0-0.2	0	0	0	360951.27
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	0	0	0	
	0.8-0.99	1322.00	245576.43	68.04	
	1	573.00	115374.84	31.96	
10%	0-0.2	2822.00	503872.77	36.81	1799294.93
	0.2-0.4	239.00	42466.87	3.10	
	0.4-0.6	0	0	0	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	4437.00	822622.10	60.09	
30%	0-0.2	11374	2175323.75	41.42	5251883.56
	0.2-0.4	0	0	0	
	0.4-0.6	0	0	0	
	0.6-0.8	0	0	0	
	0.8-0.99	0	0	0	
	1	16558	3076559.81	58.58	

2.2 Proportions of various selection criteria across scenarios

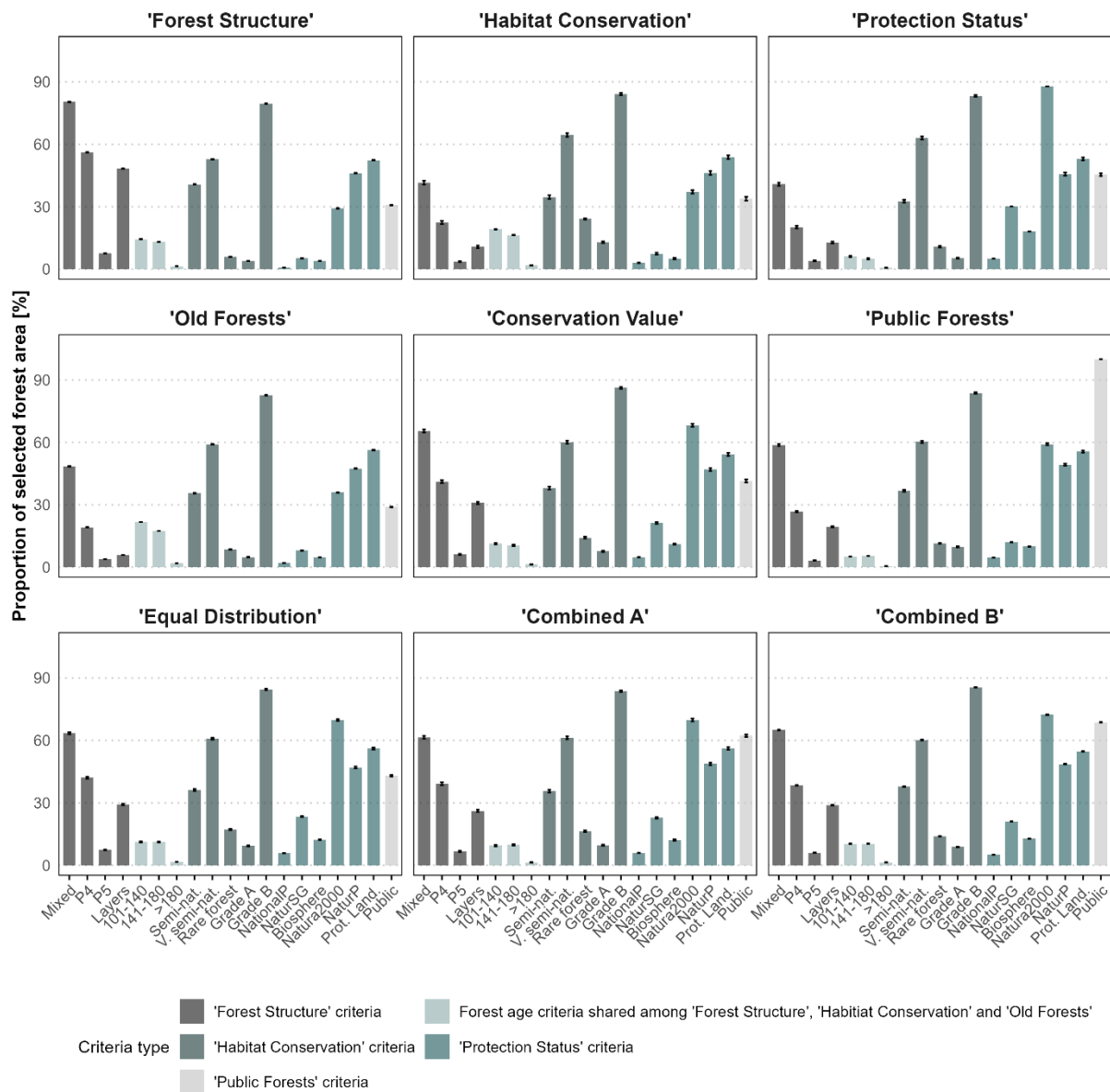


Fig. 5 Proportion of criteria contributing to the newly selected forest area for the various scenarios at the 5% target. The bars represent the mean and standard deviation of the proportions over 500 selection iterations. The colouring of the bars indicates the scenario-specific criteria. Forest age is a criterion in several scenarios, and hence, is indicated as 'Forest age criteria shared among 'Forest Structure', 'Habitat Conservation' and 'Old Forests'' in the legend. Abbreviations: Mixed – Mixed forest stands; P4 – Late development phase 4; P5 – Late development phase 5; Layers – Stands with multiple canopy layers; 101–140 – Forest stands aged 101–140 years; 141–180 – Forest stands aged 141–180 years; >180 – Forest stands aged >180 years; Semi-nat. – Seminatural forest stands; V. semi-nat. – Very seminatural forest stands; Rare forest – Rare forest communities; Grade A – Conservation status A (excellent); Grade B – Conservation status B (good); NationalP – National park (Nationalpark); NaturSG – Nature reserves (Naturschutzgebiet); Biosphere – Biosphere reserves; Natura2000 – Natura2000 areas; NaturP – Nature parks (Naturpark); Prot. Land. – Protected landscape (Landschaftsschutzgebiet); Public – Public forests

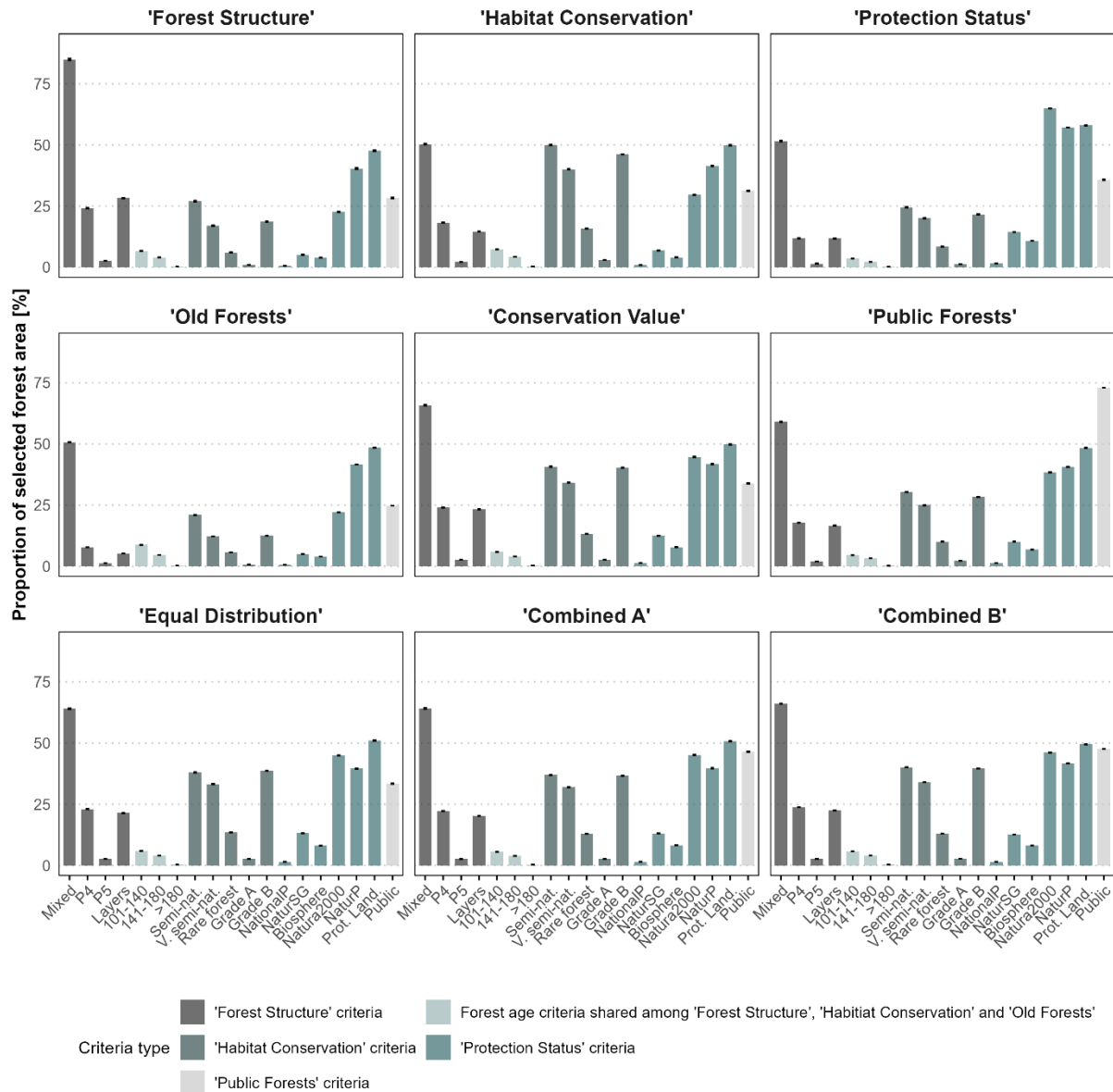


Fig. 6 Proportion of criteria contributing to the newly selected forest area for the various scenarios at the 30% target. The bars represent the mean and standard deviation of the proportions over 500 selection iterations. The colouring of the bars indicates the scenario-specific criteria. Forest age is a criterion in several scenarios, and hence, is indicated as 'Forest age criteria shared among 'Forest Structure', 'Habitat Conservation' and 'Old Forests' in the legend. Abbreviations: Mixed – Mixed forest stands; P4 – Late development phase 4; P5 – Late development phase 5; Layers – Stands with multiple canopy layers; 101–140 – Forest stands aged 101–140 years; 141–180 – Forest stands aged 141–180 years; >180 – Forest stands aged >180 years; Semi-nat. – Seminatural forest stands; V. semi-nat. – Very seminatural forest stands; Rare forest – Rare forest communities; Grade A – Conservation status A (excellent); Grade B – Conservation status B (good); NationalP – National park (Nationalpark); NaturSG – Nature reserves (Naturschutzgebiet); Biosphere – Biosphere reserves; Natura2000 – Natura2000 areas; NaturP – Nature parks (Naturpark); Prot. Land. – Protected landscape (Landschaftsschutzgebiet); Public – Public forests

2.3 Co-occurring criteria across scenarios

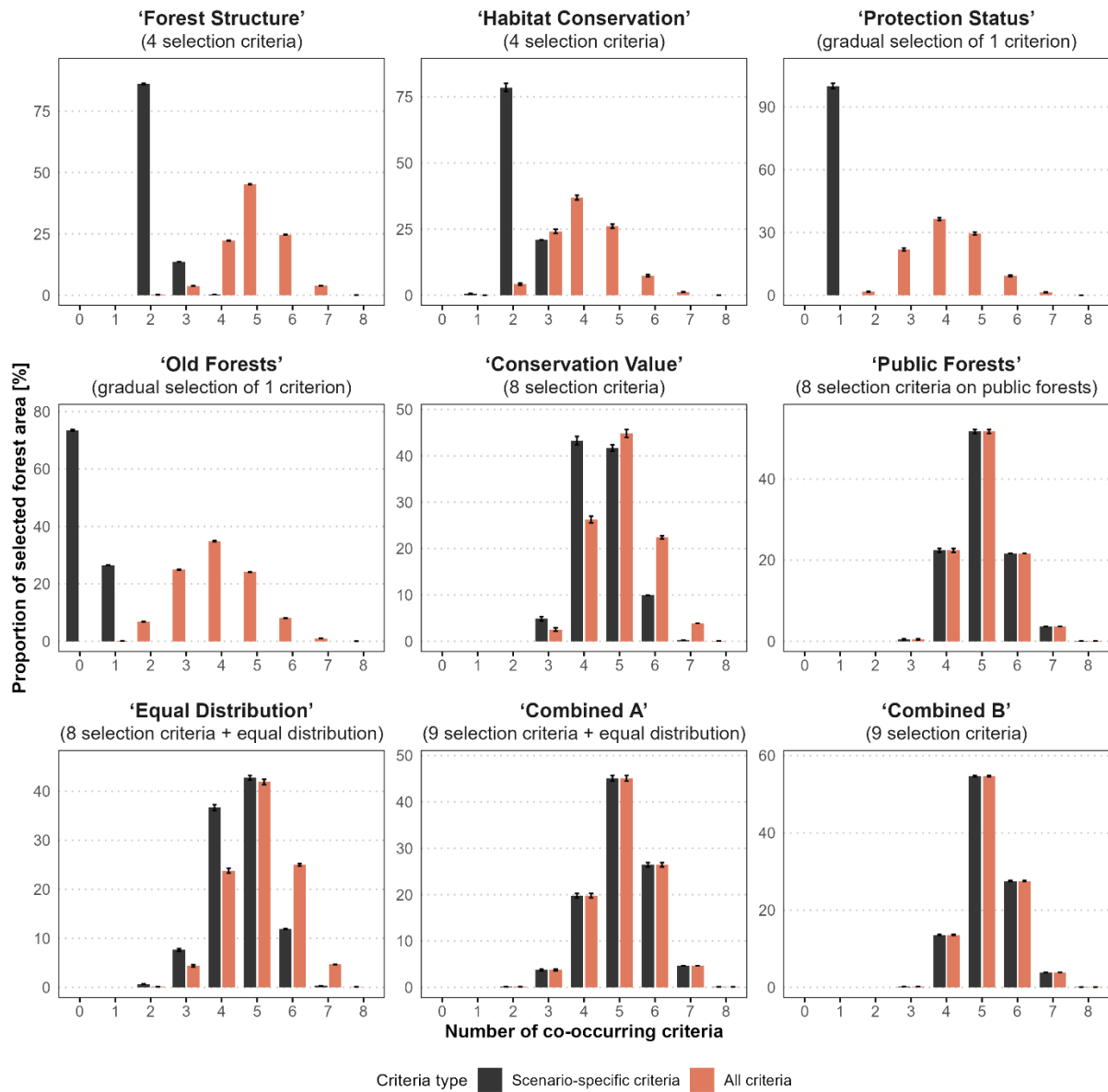


Fig. 7 Proportion of co-occurring criteria contributing to the newly selected forest areas for the various scenarios at the 5% target. The figure differentiates between the number of scenario-specific criteria met (black bars) and the total number of co-occurring criteria met (orange bars). The explanations in parentheses indicate the number of selection criteria for each scenario that can co-occur within the same forest area. The bars show the mean and standard deviation over 500 selection iterations

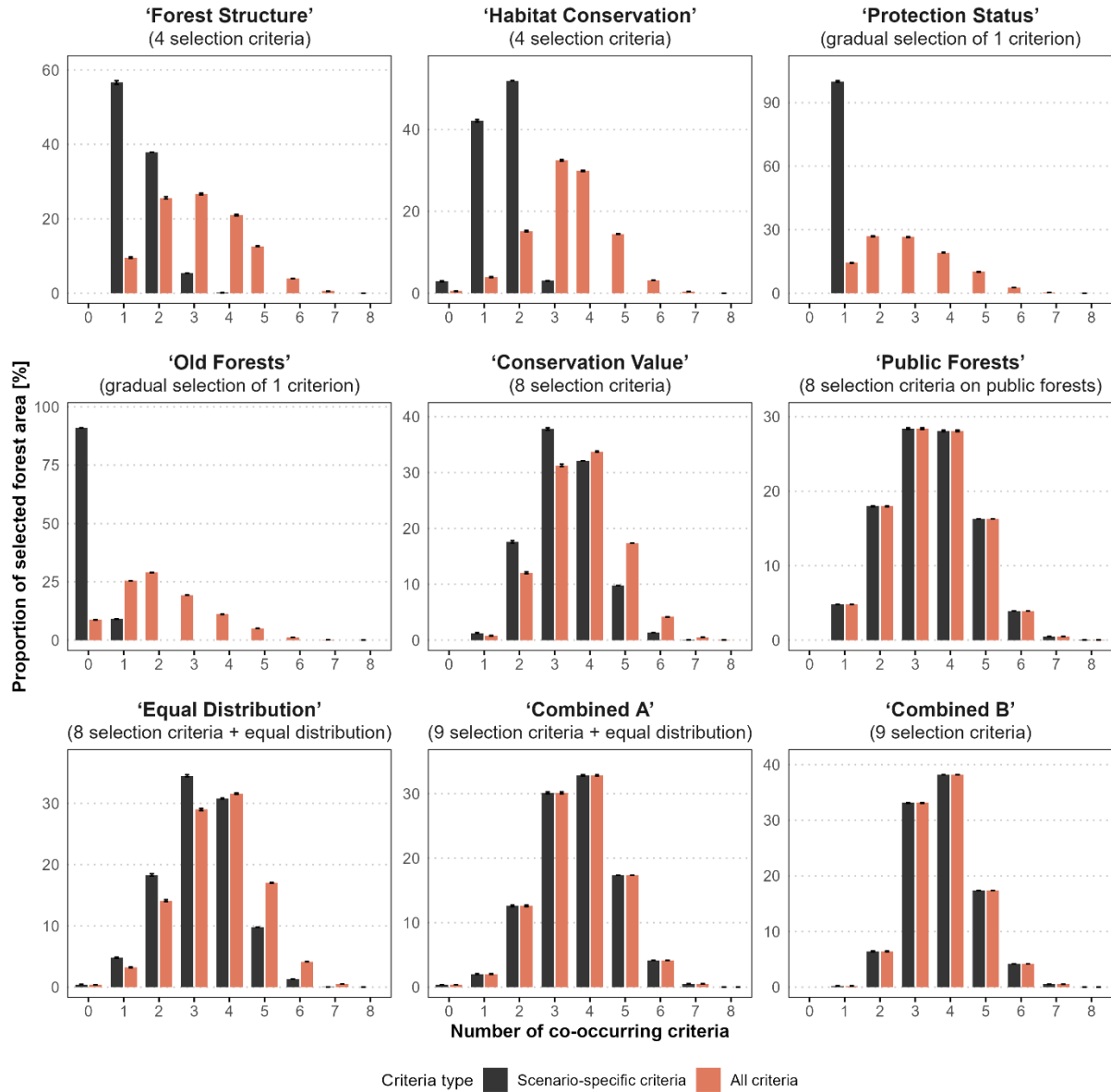


Fig. 8 Proportion of co-occurring criteria contributing to the newly selected forest areas for the various scenarios at the 30% target. The figure differentiates between the number of scenario-specific criteria met (black bars) and the total number of co-occurring criteria met (orange bars). The explanations in parentheses indicate the number of selection criteria for each scenario that can co-occur within the same forest area. The bars show the mean and standard deviation over 500 selection iterations