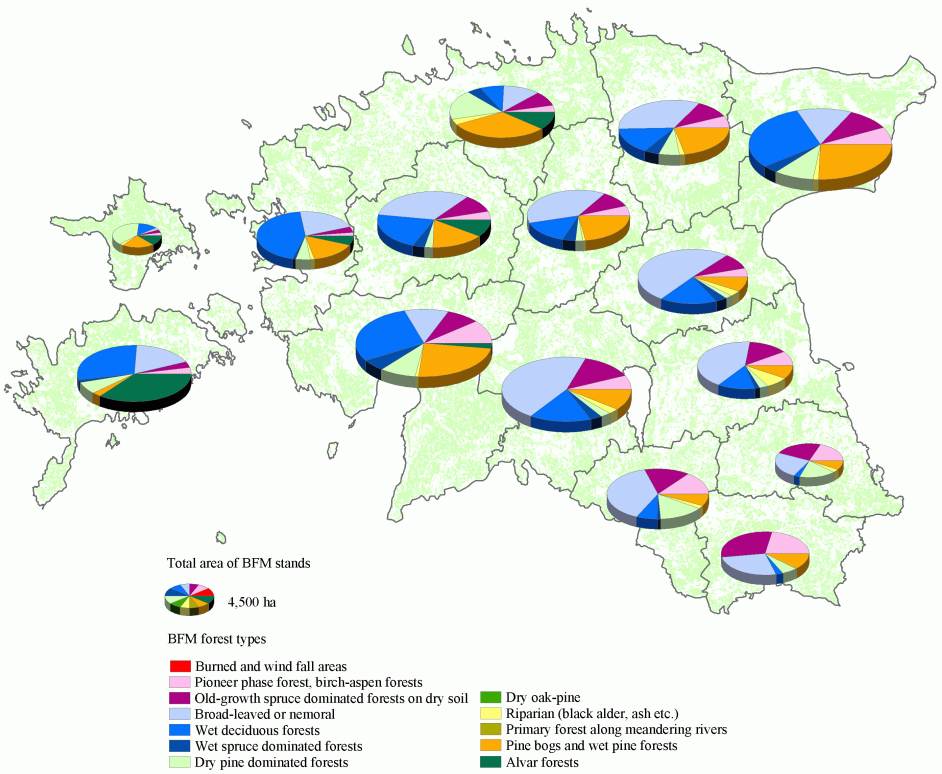


Figure 3.20. *Distribution of BFM stands by forest families within Estonian forest enterprises. CORINE Land Cover Data: © European Commission*

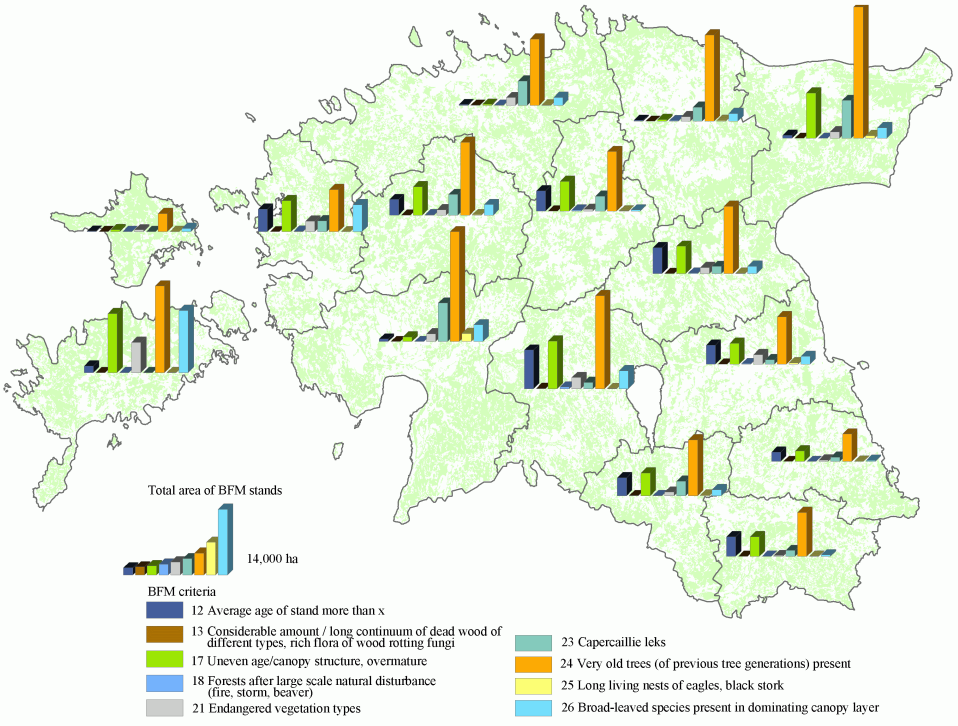


Figure 3.21. *Amount of BFM stands by BFM criteria within Estonian forest enterprises. CORINE Land Cover Data © European Commission*

Latvia

In general, the distribution of forest meeting different BFM criteria is uneven throughout the country, although some traits stand out (Figure 3.23). The highest concentrations of BFM stands are found in the northern, north-western and western parts of Latvia. There is a decreasing west–east and north–south gradient of BFM sites clearly related to forest cover in these regions. Areas with higher forest cover have more BFM stands. For example, the total forest cover exceeds 55% in Ventspils county, and this region has a higher area of selected BFM sites than neighbouring Tukums county, which has less forest cover.

The regional distribution of forest types selected in BFM is also closely related to the general distribution of types (Figure 3.22). For example, a high proportion of BFM pine forests is found along the Baltic Sea and Riga gulf shore, where this type is very common. The highest proportion of the broad-leaved forests in the Latvian BFM database is found in rich soil areas,

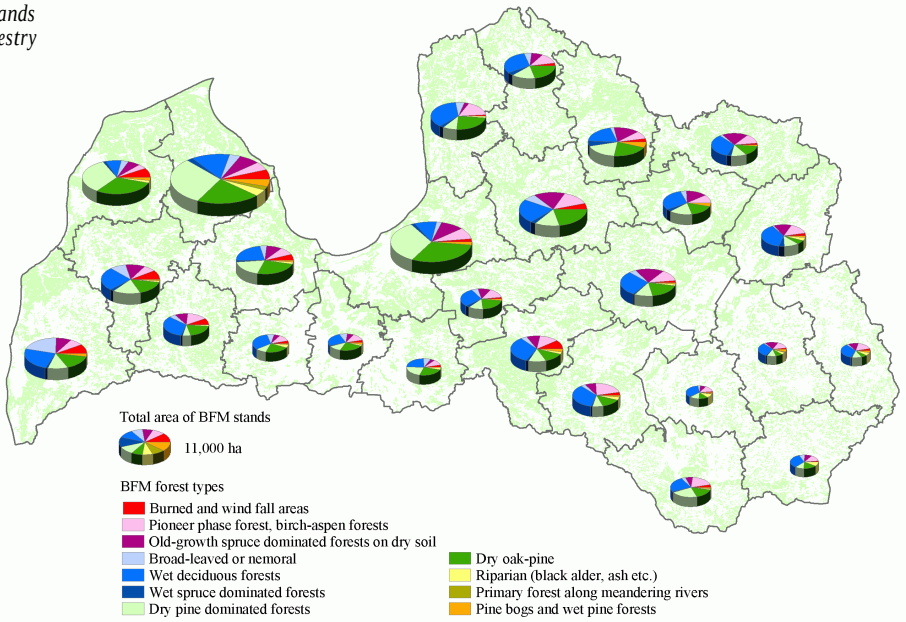


Figure 3.22. *Distribution of BFM stands by forest families within Latvian forestry units.*

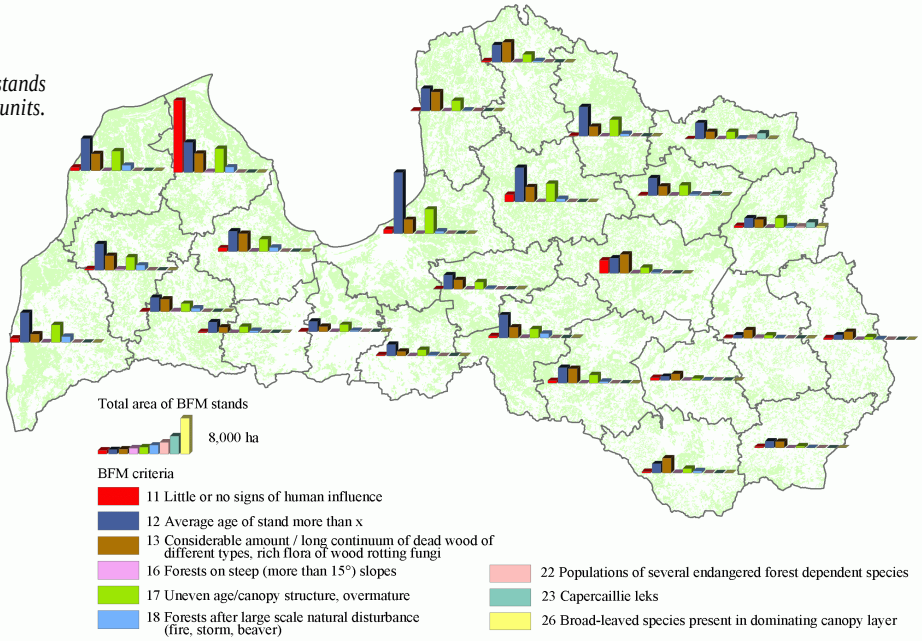


Figure 3.23. *Distribution of BFM stands by BFM criteria within Latvian forestry units.*

i.e. on glacial plains in southern and south-western Latvia, although the total area of this type is relatively small because of historical land use changes. Wet deciduous forests selected by BFM make up quite a significant share in counties where they are well represented in general. For example, ca 40% of all BFM stands belong to the wet deciduous forest type in Limbazi county.

The proportional share of forest types “Forest after large scale disturbance” is higher in elevated areas in northern and north-western Latvia. The proportion of private forests is also one of the highest in these regions. Old-growth spruce forests are more abundant in the north-east, which is explained by more boreal climate conditions.

The amount of BFM stands in some regions is related not only to forest coverage, but also to former and present forest management practices. There are more restrictions on forest management along the seashore (e.g. low intensity felling) and, consequently, more stands meet BFM criteria in these areas. In contrast, forests in eastern and southern regions have been very intensively managed in the past, and have less BFM stands.

BFM forests meeting the age criterion are more abundant in western, northern and central parts of Latvia. The highest concentration of such BFM stands is in Riga county. This could be due to the increased final felling age around Riga city during the last 30 years. Increased felling age also explains the relative abundance of old age pine forests along seashore. In areas with a relatively high proportion of strictly protected forests (e.g. north-western of Latvia), the area of stands with little or no signs of human influence is the highest.

Stands with a considerable amount of dead wood are more abundant in Ogres, Madonas, Valmieras and Jekabpils counties,

where the high proportion of deciduous forests generate a lot of decaying wood. In counties where spruce and dry forests prevail the area of stands with large amounts of decaying wood is considerably smaller than of stands meeting an age criterion.

BFM forests meeting the uneven canopy structure criterion are represented in all counties. Despite the small total area of BFM forests in the region, relatively more stands meeting this criterion are found in the southern part of Latvia. The presence of broad-leaved forests in the area might be the main reason for this. More than average uneven canopy structure BFM stands are also found in Gulbene, Balvi and Aluksne counties, where wet deciduous and old-growth spruce forests are relatively common.

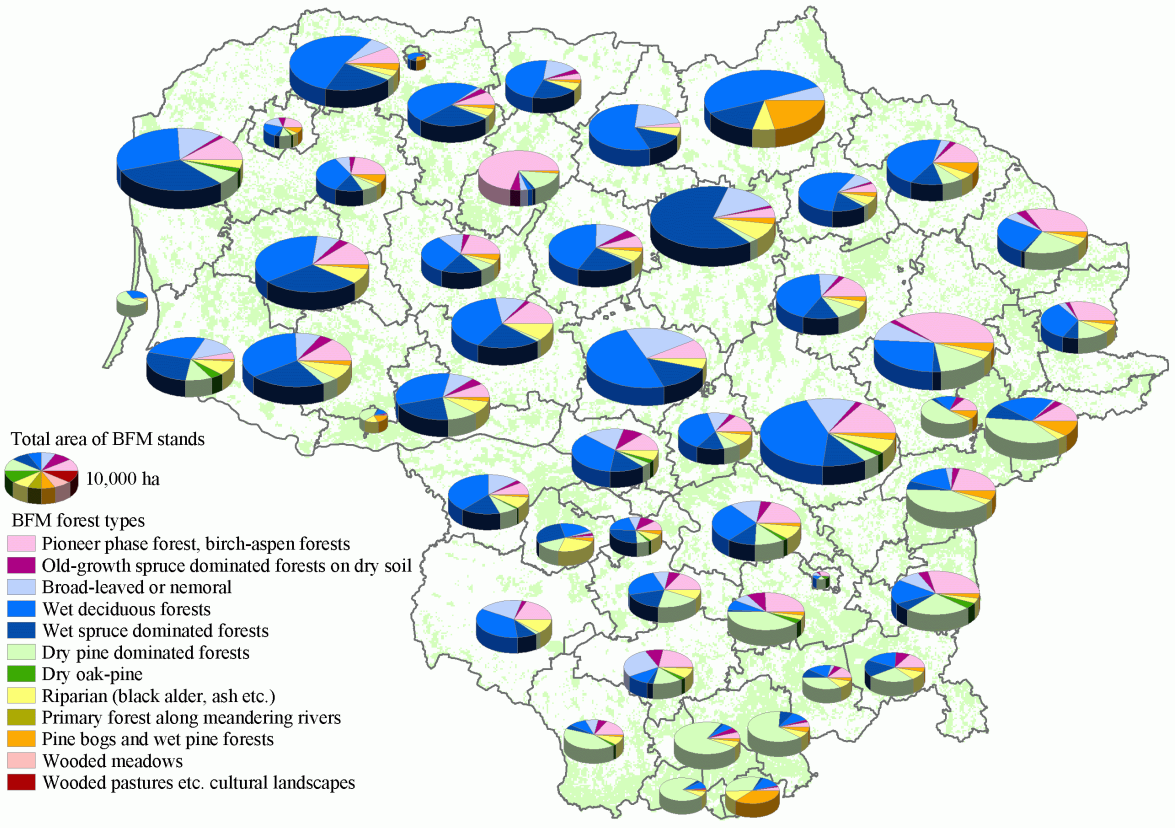
Lithuania

The largest areas of BFM stands are situated in the central, northern and western parts of Lithuania where wet deciduous and spruce-dominated forests prevail. Southern and south-eastern parts of the country, dominated by dry pine forests, have much smaller areas of BFM stands, although this is the most forested part of the country (see Figure 3.24).

Figure 3.25 clearly shows that the uneven age / canopy structure criterion prevails all over Lithuania. Its dominance is reduced in the eastern part of the country, where the amount of BFM stands selected is more from age alone than uneven age / canopy structure. Forests on steep slopes are more common in the hilly western part of Lithuania. The total area of BFM stands is much lower in the more forested south-eastern part of the country.

Figure 3.25 shows the relative percentages of BFM stands. It can be seen that the most frequent criterion (uneven age / canopy structure) is met in more than one third of BFM forest stands in the central and western parts of the country, and in more than half in the two centremost forestry administrative units – Kaunas and Kedainiai. A very high percentage of stands with little or no signs of human influence can be found in the Strict Nature Reserves, but the absolute area of those stands is rather small. The share of BFM age criterion stands increases towards the eastern part of the country. BFM stands of broad-leaved tree species in the dominant canopy layer increase in the south-western regions of the country (Suvalkija). In general, potentially valuable stands are unevenly distributed throughout the country, with more valuable stands in the central part of Lithuania and significantly less further south.

Figure 3.24. *Distribution of BFM stands by forest families within Lithuanian forest enterprises.*



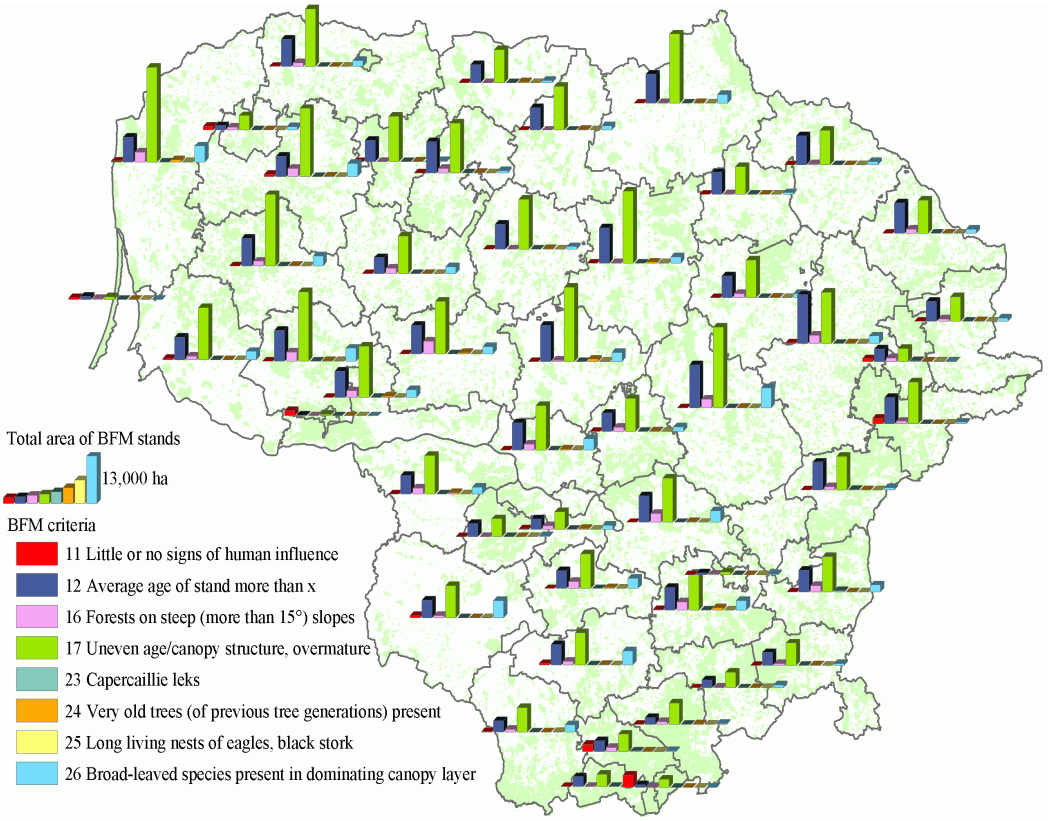


Figure 3.25. *Distribution of BFM stands by criteria within Lithuanian forest companies*

3.5 Comparison of existing Protected Area networks vs. BFM results

Estonia

The general nature value of the Estonian protected areas, their conformity with the BFM criteria and the legal protection of BFM forests were not assessed in the course of the project, since the existing digital data on the forests of protected areas did not allow this. Some private forests have not been surveyed, and the available databases do not give information on the possible protection status of forests of former collective farms. Also, the Estonian EELIS database shows the different zones of protected areas but not the actual land use, making assessment difficult.

Latvia

The discussion presented here deals with the current network of Protected Areas (PA) in Latvia. Small-scale protected areas (Woodland Key Habitats) are not treated.

Only 8% of the BFM area in Latvia is strictly protected, with a further 12 % under some degree of protection. A further 15% of BFM forests are situated inside an existing PA, but are in practice without real protection. The rest of BFM stands (ca. 65% of the total) are situated in commercial, unprotected forests. Using the total area of Latvian forests as a reference, 0,7% of Latvian forests are currently both strictly protected and fulfil at least one BFM criterion; an additional 1,3% of forests are both partly protected and fulfil at least one BFM criterion, while 7,9% of Latvia's forests fulfil at least one BFM criterion but are not protected at all (Figures 3.26, 3.27).

The most common BFM forest type in Latvia, wet deciduous forests, is not the best protected one. Ca 85% of the area of this type is not protected at all, and only a minor share (5%) is strictly protected. Dry pine forests are also protected only to a limited extent. In total, 75% of the total BFM area of dry pine forests is not protected at all. However, the proportion of pine forests under strict protection corresponds to 12% of their total BFM selected area. Another relatively better protected BFM forest type is riparian forests, of which 23 % is under strict protection. Around 11% of pine bogs and wet pine BFM forest is strictly protected.

The least protected BFM forest types in Latvia are the broad-leaved forests and Pioneer phase (birch-aspen) forests. In spite of their presence and abundance in the BFM database, only 1,2% and 0,4% of their total BFM area is strictly protected, respectively.

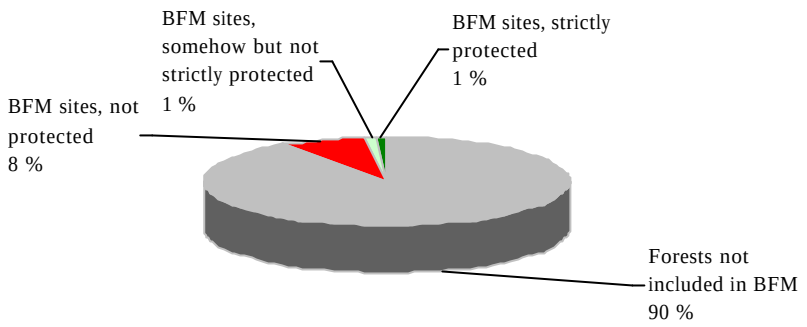
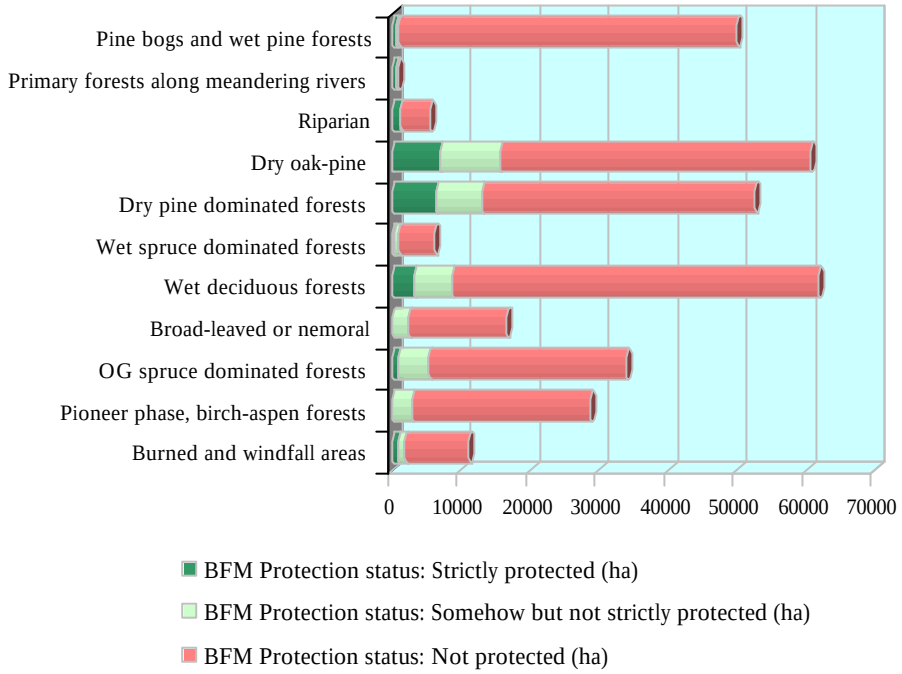


Figure 3.26. *The division of BFM forests in BFM forest protection categories in Latvia.*

Figure 3.27. *Current protection status of BFM sites by BFM forest types in Latvia.*



Lithuania

Only 2,9% of the BFM area is strictly protected in Lithuania, while an additional 27,9% of BFM forests are afforded some degree of protection. The rest, 69,2%, is unprotected. Using the total area of Lithuanian forests as a reference, forests both strictly protected and included in the BFM database amount to 0,9%; the corresponding figure for partly protected BFM forests is 8,8%, while 21,8% of Lithuanian forest is BFM forest without any protection status (Figures 3.28, 3.29).

The dominant BFM forest types – wet deciduous and spruce dominated forests – are the least protected ones. 78% and 86,7% of their area, respectively, is not protected at all, and only a very small share of these forest types is strictly protected.

The best protected forest types of the BFM database are the pine bogs and wet pine forests (13.1% strictly protected). Ca 5% of the territory of the dry pine dominated and riparian forests forest in the BFM database is strictly protected, and for the wooded meadows the respective figure is 10%. Forest types covering smaller areas are relatively under better protection status than commoner types, e.g. all primary forests along meandering rivers are at least partly protected.

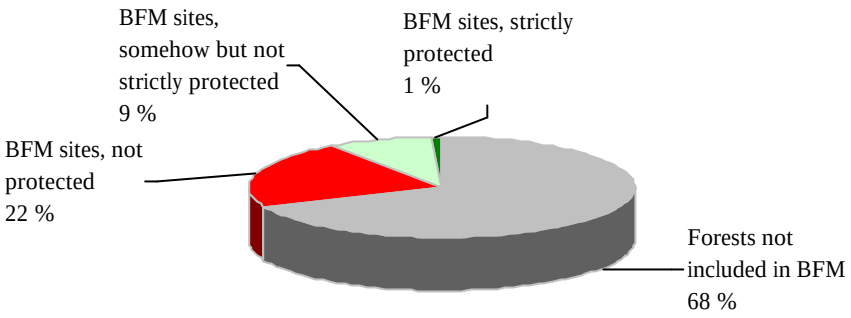
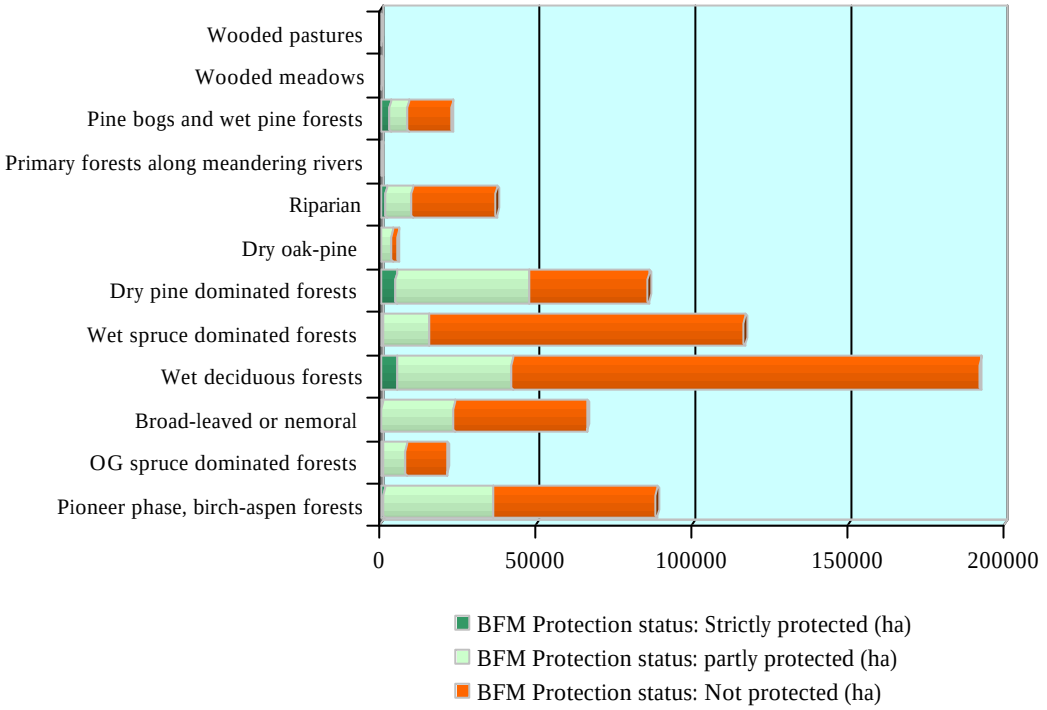


Figure 3.28. *The division of BFM forests in BFM forest protection categories in Lithuania.*

Figure 3.29. *Current protection status of BFM sites by BFM forest types in Lithuania.*



3.6 How reliable are the results and how this can be evaluated

When evaluating BFM data, it is important to bare in mind that the overall scope of the BFM project is not at stand but at landscape level (cf. the Woodland Key Habitat approach). Regions with high concentrations of BFM stands are, ecologically speaking, in a better position to conserve forest biodiversity than others.

Because of the general nature of BFM definitions of valuable forests, the biological value of individual BFM stands will vary, but this is not crucial as long as the overall selection criteria are sufficiently stringent. A stand meeting BFM criteria has a high probability of hosting more biologically valuable features than average forests, or at least has high potential to become biologically valuable in a relatively short time.

A single stand included in the BFM database due e.g. to high age may be relatively species-poor, and have currently relatively little nature conservation value because of, say, uniform age, the presence of only one tree species, only small amounts of decaying wood etc. Such stands have, however, a high potential to develop into a biologically valuable forest as old trees start to decay naturally, increasing the quantity of rotting wood and the diversity of the forest ecosystem. This begins to favour the appearance of more demanding forest species.

Some BFM stands will per force have already been logged from the time of the BFM analysis to the present day. There is as yet no method for automatic update of BFM data. Also, a stand not included in the BFM database may contain biological values that are not indicated in the source data of the BFM project. Especially the quantity and quality of dead

wood, lack of traces of human activities, and the presence of single very old trees are features only seldom indicated by the national forestry databases.

Estonia

Case study: Biological values of BFM forests in Estonia: *Do BFM forests have a higher natural value than average based on indicator species?*

The Estonian Forest Conservation Area Network (EFCAN) project (Korjus & Viilma 1998) carried out field inventories of some indicator species groups in sample areas. In the BFM project, the EFCAN field inventory data of fungi and lichen flora was used to evaluate how the BFM criteria correlate with biological values defined by the indicator species. As a conclusion of the comparison studies presented below, it can be concluded that the sites selected in the BFM database seem to have high probability to host biological values on the basis of indicator species groups such as lichen and fungi.

Biological value of BFM forests based on EFCAN lichen inventories

A lichen inventory was carried out in 56 sampling units within forest sites selected by the EFCAN project. The biological value of forests, using the lichen flora as an indicator, was defined by the following scale:

strict protection necessary (very rich lichen flora, many vulnerable species)
strict protection advisable
site to be managed as a protection forest
has no particular conservation value according to lichen flora

Of the sites where a lichen inventory was carried out, 57% were partly or fully included in the Estonian BFM database. Of these, 98% had at least some biological value on the basis of lichen flora. In 64% of the BFM sites in the sample strict protection was necessary or advisable, and 34% of the sites were defined to be managed as protection forests. Only 2% of the sites included in BFM had no particular conservation value for lichens.

The classification of the BFM stands where the lichen inventory was carried out is presented in Table 3.11.

Values of BFM forests based on EFCAN fungi inventories

In addition to the lichen inventory, an inventory of fungi was carried out in a sample area within sites pre-selected by the EFCAN project. Of the sites where the fungi flora inventory was carried out, 126 sites (sub-compartments) were included in the Estonian BFM database. Of these BFM sites, only 5% were defined as not deserving particular conservation attention on the basis of fungi flora, while the other 95% had at least some biological value on the basis of fungi. The classification of the BFM stands defined as biologically valuable on the basis of fungi is given in Table 3.12.

Table 3.11. *Classification of BFM sites, defined as biologically valuable on the basis of the EFCAN lichen inventory by BFM criteria. Each stand can fulfil several criteria.*

Criterion	**Number of stands**
Little or no signs of human influence	2
Average age of the stand	22
Considerable amount/long continuum of dead wood	0
Largest blocks of unfragmented forests	0
Forests on steep slopes, ravines	0
Uneven age/canopy structure	32
Forests after large scale natural disturbance	2
Endangered vegetation types	20
Population of several endangered forest dependent species	0
Capercaillie leks	6
Very old trees (of previous tree generations) present	32
Long living nests of eagles, Black Stork	1
Broad-leaved species present in the dominating canopy layer	18
Natural drainage basins	0
Limited access areas	0
Total	58

Table 3.12. *Classification of BFM sites, defined as biologically valuable on the basis of the EFCAN fungi inventory by BFM criteria. Each stand may fulfil one or more criterion.*

Criterion	Number of stands
Little or no signs of human influence	3
Average age of the stand	22
Considerable amount/long continuum of dead wood	0
Largest blocks of unfragmented forests	0
Forests on steep slopes, ravines	0
Uneven age/canopy structure	37
Forests after large scale natural disturbance	0
Endangered vegetation types	20
Population of several endangered forest dependent species	0
Capercaillie leks	0
Very old trees (of previous tree generations) present	37
Long living nests of eagles, Black Stork	1
Broad-leaved species present in the dominating canopy layer	16
Natural drainage basins	0
Limited access areas	1
Total	50

Latvia

A correlation test was made of Latvian BFM and Woodland Key Habitat (WKH) data sets for four forestry districts (Table 3.13). However, the major attention of the WKH project is focussed on identification of local and usually small-scale habitats hosting specialised species groups. The criteria of WKH are set differently and are in some respects much stricter than in the BFM project. For this reason the total area of WKHs delineated is considerably smaller than BFM sites.

The objective of correlation test was to find out how many WKH of each selected region are also included in BFM (Table 3.13). The overlap between WKH and BFM stands is between 9% and 30% of the total WKH area in the sample.

Lithuania

In Lithuania, the Level 1 BFM database was created for the territories where stand level GIS information was available at the end of year 2000. Several reasons can influence the dynamics of BFM selected valuable forests:

1. The selected forest stand may be logged or thinned so that it no longer satisfies BFM criteria.
2. Natural development of a forest stand may result in achievement of the BFM criteria (e.g. average age of a stand can increase to reach the required level).
3. The assignment of forest stands into categories of biologically valuable forests will be altered as new inventory data arrives and the BFM database is updated. This may be simply the logging and aging of stands cited above, but also include reassessment of stands due e.g. the availability of new biological data.

Influence of forest inventory information on the BFM database content

The content of the BFM database – a list of potentially biologically valuable forest stands – is influenced over time by natural (e.g. succession) and artificial (e.g. logging) factors. The database is mainly based on available information collected during stand-wise inventories. Although the field methods of the stand-wise inventories have remained practically the same during several decades, there is a lot of potential reasons why the results of two subsequent inventories are not fully compatible. For example, panchromatic orthophotos have been used during the last five years, while earlier inventories used CIR aerial photos. This could lead to a lower number of tree species described during the field measurements.

In order to get a view on the influence of stand attribute data on the BFM database, two consecutive versions of the BFM database for the same area were developed, based on two consecutive stand-wise inventory data sets. This was possible for such forestry administrative units (districts) inventoried during 2001 (Figure 3.30).

Figure 3.30. *Forest companies where two versions of the BFM database for the same area were available*

*Table 3.13. Comparison between Woodland Key Habitats and BFM sites in four forestry districts ale*Total

Forest types	Forestry district	ZiemelKurzeme	Dienvidkurzeme	Vidusdaugava	Ziemellatgale	Total
Burned and wind fall areas	WKH meeting BFM criteria, ha	13	6		6	25
	BFM, ha	1971	171	819	493	3453
Pioneer phase forest, birch-aspen forests	WKH meeting BFM criteria, ha	147	194	135	79	555
	BFM, ha	1584	682	1007	352	3625
Old-growth spruce dominated forests	WKH meeting BFM criteria, ha	181	39	85	91	395
	BFM, ha	1829	256	677	470	3232
Broad-leaved or nemoral forests	WKH meeting BFM criteria, ha	57	22	22	6	107
	BFM, ha	901	52	150	57	1159
Wet deciduous forests	WKH meeting BFM criteria, ha	165	58	99	80	402
	BFM, ha	2622	346	1137	1111	5215
Wet spruce dominated forests	WKH meeting BFM criteria, ha	31	6	9	7	52
	BFM, ha	264	36	125	39	463
Dry pine dominated forests	WKH meeting BFM criteria, ha	245	38	49	114	445
	BFM, ha	2122	530	1066	611	4329
Dry oak-pine forests	WKH meeting BFM criteria, ha	324	80	34	234	672
	BFM, ha	2521	396	1051	1536	5503
Riparian forests	WKH meeting BFM criteria, ha	0		4	16	20
	BFM, ha	39	2	137	50	228
Primary forest along meandering rivers	WKH meeting BFM criteria, ha			13		13
	BFM, ha	5		17		21
Wooded peatlands	WKH meeting BFM criteria, ha	95	9	21		125
	BFM, ha	175	10	305	2	492
Total	WKH meeting BFM criteria, ha	1257	451	471	633	2811
	BFM, ha	14031	2480	6490	4720	27720
	WKH meeting BFM criteria %	36	10	20	16	20
	WKH, ha	3444	4561	2367	4031	14403

Five forestry districts were covered by the analysis. The algorithm used for calculation included checking every stand for meeting BFM criteria and forest types. This was done for two versions of the forest stand attribute data bank based on an inventory 10-15 years old (updated to 1 January 2001), and a new inventory from the summer of 2001, below referred to as Inventory 1 and Inventory 2, respectively.

Results of the analysis are given in Table 3.14. Only BFM criteria completely based on the stand characteristics were taken into account. The forest districts under consideration could be characterised as the poorest in terms of the total amount of BFM stands in Lithuania with pine forest on dry sandy soils prevalent.

The results indicate that the amount of stands meeting the BFM criteria increased by more ca 2% during the period between the two inventories, except in Dzukija National Park, where the amount of BFM stands increased by 1%. The total forest cover in the study area increased by 0,3-0,6% per year. This is mainly a result of afforestation of non-fertile or abandoned lands. The increase in the proportion of stands meeting the BFM age criterion could lead one to assume that the clearcuttings are being compensated by natural forest growth. However, there is a decrease of up to 15% in the number of stands meeting the Lithuanian BFM sub-criterion 17.3 (presence of trees of maturity age plus 20 years).

Table 3.14. *Proportion (%) of BFM stands (area) in Inventory 1 and Inventory 2 data*

Forestry unit	Area of all stands	Proportion (%) of BFM stands by criteria						
		All criteria	Average age of stand	16 Forests on steep slopes	50 years old at least	years within the stand	than in the table of criterion 12	17 Uneven age/canopy structure, total
Inventory2								
Varenos	57593	15,9	5,2	1,0	3,4	9,2	1,5	12,2
Druskininku	25756	20,9	12,6	0,5	3,0	10,8	5,4	14,9
DNP	47993	16,0	6,2	2,7	2,0	8,6	1,5	10,5
Valkininkai	45291	13,6	7,3	0,4	4,6	4,7	2,5	9,2
Salcininkai	50798	16,7	8,0	0,2	7,7	5,3	3,6	12,9
Inventory1								
Varenos	54621	13,3	3,3	1,3	2,7	7,2	1,6	10,1
Druskininku	24337	18,6	11,1	0,4	1,8	8,1	6,4	13,2
DNP	46370	15,2	6,1	2,2	1,8	7,2	1,9	9,6
Valkininku	42277	11,3	5,0	0,4	4,0	4,1	2,6	8,4
Šalcininku	47840	14,2	6,5	1,0	5,7	3,5	3,2	10,0
Difference between Inventory2 and Inventory1								
Varenos	2972	2,6	2,0	-0,3	0,7	2,0	-0,1	2,1
Druskininku	1420	2,3	1,5	0,1	1,2	2,7	-1,0	1,7
DNP	1623	0,9	0,0	0,5	0,2	1,4	-0,4	0,9
Valkininku	3014	2,3	2,3	0,0	0,6	0,6	-0,1	0,8
Šalcininku	2958	2,5	1,5	-0,8	2,0	1,8	0,4	2,9

3.7 Threats to and disappearance of BFM stands

Influence of final felling on the BFM forests in Estonia

To estimate the rate of disappearances of BFM stands, an analysis of the logging intensity in BFM stands was carried out for all state owned forests of Estonia. Some 177 700 ha of forests fulfilled at least one BFM criterion in Estonian state forests.

Up-to-date logging data was not available for some forests districts, but the available data still covered 177100 ha of BFM stands in state forests. In total, 54 800 ha of forest meeting at least one BFM criterion were cut during the period between the previous field inventory and the analysis date (summer 2002). The average period between the previous field inventory and the analysis date (summer 2002) of stands was 7,3 years. The average annual logging rates of BFM forests in Estonia are given Table 3.15.

The results show that all forest types are under high logging pressure. Only dry pine forests, riparian forests and wooded peatlands have a slightly lower relative volume of annual logging. In riparian forests and in wooded peatlands this can partly explained by their lower economic value.

Table 3.16 shows that forests meeting certain BFM criteria are more threatened by logging than other types. Forests without human impact, forests with limited access, and sites with endangered bird species appear to be logged only in exceptional cases. Most of the logged BFM forests were old stands with uneven canopy structure, as might be expected.

Unfortunately it was not possible carry out a similar analysis for private and for ownerless forests. Theoretically no logging should take place in the latter. The logging intensity in private forests is presumably higher than in state forests. Other analyses have shown that the average annual harvest rate in private forests in Estonia is very high (10,1 m^3/ha), three times the state forest average of 3,6 m^3/ha. Thereby it is probable that BFM stands owned by private persons or companies are disappearing around three time faster than those in state forests.

Influence of final felling on BFM forests in Latvia

For Latvia the Level 1 database was created for areas where stand level GIS information was available at the beginning of 2001. Stand attributes refer to the situation on January 1, 2001.

A test of the logging rate of BFM forests was carried using the data on logging in state and private forests for 2001 in Bauska County (Table 3.17). The logging intensity in ownerless forests was not analysed. The numbers of stands logged clearly indicate that logging intensity is much higher in private forests compared to state forests.

The results also indicate that certain forest types are being affected by logging more than other types. The highest proportion of logged BFM stands belong to wet spruce forests – up to 25% of total BFM wet spruce forest area in the study area. Pioneer phase (birch-aspen) and riparian forests are also influenced considerably compared to other forest types – 15% and 18% logged, respectively. The lowest logging intensity was observed in broad-leaved forests, with ca. 0,5 % of their total BFM area logged in 2001.

Influence of final felling on the BFM forests in Lithuania

Logging data of eight Lithuanian forestry units (Figure 3.31) in the year 2001 was used for an analyses of the influence of final felling on BFM forests. The forestry units contained a variety of different stands meeting BFM criteria (Table 3.18); e.g. Birzai forest unit is one of the most BFM- rich areas of Lithuania, because deciduous forests prevail there. Some other units such as Nemencine, Svencioneliai and Vilnius, with coniferous forests prevailing, are less rich in BFM stands.

Table 3.19 gives the figures how fast BFM forests are disappearing in the study area. All types of final cutting were taken into account. As expected, more stands meeting the BFM age criterion were cut compared with other BFM stands such as "Uneven canopy / age structure". On average, the results indicate that slightly less than 1 % of BFM stands are being cut annually.

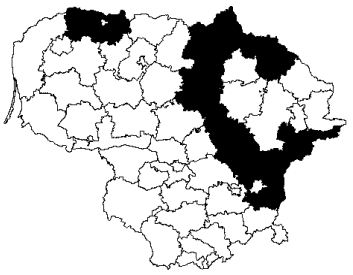


Figure 3.31. *Lithuanian forestry units (districts) where the influence of logging on BFM sites was evaluated (black areas on the map).*

Table 3.15. *Average annual logging of BFM forests in Estonia by BFM forest types.*

	Analysed area	Average annual logging	
	ha	ha	%
Burned and find fall areas	45	3	6,9
Pioneer phase forest, birch-aspen forests	12180	560	4,6
Old-growth spruce dominated forests	13830	670	4,8
Broad-leaved or nemoral forests	33390	1780	5,3
Wet deciduous forests	30030	1500	5,0
Wet spruce dominated forests	6060	320	5,2
Dry pine dominated forests	24050	780	3,2
Dry oak-pine forests	93	6	6,5
Riparian forests	3610	130	3,7
Primary forests along meandering rivers	0	0	0,0
Wooded peatlands	48600	1440	3,0
Alvar forests	5240	330	6,4
Total	177120	7520	4,2

Table 3.16. *How do logged BFM sites divide by BFM criteria? (Sums of the % figures may be over 100, because a stand may fulfil more than one criterion at the same time).*

	no signs of human influence	12. Average age of stand	continuum of dead wood	17. Uneven age / canopy structure	natural disturbance	vegetation types	23. Capercaillie leks	) present	Stork	dominating canopy layer	28. Limited access areas
Burned and wind fall areas	0,0 %	38,7 %	35,5 %	35,5 %	32,3 %	0,0 %	0,0 %	35,5 %	0,0 %	3,2 %	0,0 %
Pioneer phase forest, birch-aspen forests	0,6 %	62,2 %	0,3 %	68,2 %	2,9 %	0,0 %	4,6 %	69,3 %	0,3 %	2,1 %	0,9 %
Old-growth spruce dominated forests	0,6 %	29,3 %	0,5 %	80,4 %	5,6 %	0,0 %	5,8 %	82,7 %	0,4 %	1,5 %	0,3 %
Broad-leaved or nemoral forests	1,0 %	44,9 %	0,1 %	68,8 %	4,4 %	4,7 %	2,2 %	69,8 %	0,2 %	15,9 %	0,8 %
Wet deciduous forests	0,3 %	36,9 %	0,2 %	66,9 %	0,9 %	6,8 %	3,0 %	70,4 %	0,1 %	16,0 %	1,3 %
Wet spruce dominated forests	0,4 %	17,6 %	0,3 %	87,0 %	5,7 %	0,0 %	3,8 %	88,3 %	0,2 %	6,3 %	1,5 %
Dry pine dominated forests	0,3 %	37,2 %	0,1 %	62,6 %	4,7 %	0,0 %	21,9 %	63,7 %	2,2 %	0,0 %	1,5 %
Dry oak-pine forests	0,0 %	1,7 %	0,0 %	75,0 %	5,0 %	0,0 %	0,0 %	75,0 %	0,0 %	95,0 %	0,0 %
Riparian forests	0,0 %	11,0 %	0,0 %	13,9 %	0,3 %	99,7 %	0,5 %	19,7 %	0,0 %	3,9 %	0,4 %
Wooded peatlands	0,3 %	19,9 %	0,2 %	53,4 %	2,9 %	0,0 %	35,7 %	57,0 %	1,2 %	0,3 %	1,9 %
Alvar forests	0,2 %	10,6 %	0,0 %	61,5 %	3,5 %	43,6 %	1,5 %	61,4 %	4,4 %	3,4 %	3,4 %
Total	0,5 %	34,3 %	0,2 %	65,3 %	3,4 %	6,2 %	11,3 %	67,5 %	0,8 %	7,9 %	1,3 %

Table 3.18. *Number of stands identified on the Lithuanian Level 1 map*

	All stands		Area proportion (%) of BFM selected stands by criteria				
Forestry unit	Number	Area (ha)	Average age of stand	Forests on steep slopes	Uneven age / canopy structure	Very old trees (of previous tree generations) present	Broad-leaved species present in the dominating canopy layer
Biržu	28054	53690	15.37	0.33	36.65	0.13	4.51
Mažeikiu	40741	59850	13.96	1.79	28.45	0.23	2.89
Nemencines	32798	56260	14.12	1.65	17.02	0.04	1.23
Panevežio	37046	71990	13.90	0.12	28.34	0.43	2.41
Rokiškio	34548	48060	17.15	0.91	20.38	0.19	1.87
Švencioneliu	34964	61680	12.11	1.09	19.17	0.08	0.68
Ukmerges	44697	71910	17.01	3.43	31.97	0.31	7.94
Vilniaus	32383	55430	11.08	3.21	18.10	0.13	3.56

Table 3.17. *Logging of BFM forests in Bauska County, Latvia in 2001.*

		Area logged (ha) in 2001						
		Ownership			Total BFM area (ha) in Bauska county			
Criteria	Forest type	State forests, ha	Private forests, ha	Total area, ha	Private	State owned	Total BFM area, ha	Logged B area, %
Little or no signs of human influence	Riparian		2,5	2,5	5,9	168,5	174,4	1,4
Average age of stand	Pioneer phase, birch and aspen forests	2,6	5,1	7,7	253,7	66,2	319,9	2,4
	Old-growth spruce dominated forests		0,6	0,6	12,3	0,9	13,2	4,5
	Broad leaved forests		1,1	1,1	71,9	293	364,9	0,3
	Wet deciduous forests		5	5	77,7	456,6	534,3	0,9
	Dry pine dominated forests	16,6		16,6	10,9	492,4	503,3	3,3
	Dry oak-pine forests	16,6		16,6	39,3	514,9	554,2	3,0
	Riparian forests		2,5	2,5	0	17,3	17,3	14,4
Dead wood, rich fungi	Pioneer phase, birch+aspen		13,6	13,6	35,2	68,2	103,4	13,2
	Old-growth spruce dominated forests		3,3	3,3	24,1	56,4	80,5	4,0
	Broad leaved forests		1,1	1,1	71,9	293	364,9	0,3
	Wet spruce dominated forests		2,1	2,1	2,4	5,9	8,3	25,0
	Dry pine dominated forests		16,7	16,7	126,8	151,8	278,6	5,9
	Dry oak-pine forests		21,9	21,9	131,6	360,9	492,5	4,4
	Riparian		2,5	2,5	5,9	168,5	174,4	1,4
Uneven age/canopy structure	Old-growth spruce dominated forests	0,8		0,8	0,8	105,8	106,6	0,7
	Broad leaved forests		2,5	2,5	72,4	52,7	125,1	1,9
	Wet deciduous forests		16,2	16,2	191,6	455,3	646,9	4,6
	Dry oak-pine forests	5,6	2,5	8,1	59,6	285,	344,7	2,3
	Total	42,2	99,2	141,4	2745,3	2462,1	5207,4	2,7

Table 3.19. *Proportion (%) of BFM selected potentially valuable stands cut during 2001.*

Forestry unit	**All BFM criteria**		**Average age of stand**		**Uneven age/canopy structure**	
	Number.	Area	Number	Area	Number	Area
Birzu	1,04	0,33	1,13	0,90	0,10	0,06
Panevezio	0,85	0,31	0,88	0,74	0,07	0,05
Nemencines	0,09	0,03	0,05	0,04	0,04	0,02
Mazeikiu	1,35	0,52	1,38	1,15	0,17	0,14
Rokiskio	0,14	0,06	0,14	0,10	0,02	0,01
Svencioneliu	1,32	0,68	1,30	1,25	0,08	0,09
Ukmerges	0,67	0,25	0,95	0,67	0,03	0,02
Vilniaus	0,07	0,02	0,03	0,00	0,04	0,03
Total of eight forest units studied	0,71%	0,29%	0,77%	0,63%	0,07%	0,06%