Forestry Department
Food and Agriculture Organization of the United Nations

GLOBAL FOREST RESOURCES

ASSESSMENT

COUNTRY REPORTS

SERBIA AND MONTENEGRO

The Forest Resources Assessment Programme

Sustainably managed forests have multiple environmental and socio-economic functions important at the global, national and local scales, and play a vital part in sustainable development. Reliable and up-to-date information on the state of forest resources - not only on area and area change, but also on such variables as growing stock, wood and non-wood products, carbon, protected areas, use of forests for recreation and other services, biological diversity and forests' contribution to national economies - is crucial to support decision-making for policies and programmes in forestry and sustainable development at all levels.

FAO, at the request of its member countries, regularly monitors the world's forests and their management and uses through the Forest Resources Assessment Programme. This country report forms part of the Global Forest Resources Assessment 2005 (FRA 2005), which is the most comprehensive assessment to date. More than 800 people have been involved, including 172 national correspondents and their colleagues, an Advisory Group, international experts, FAO staff, consultants and volunteers. Information has been collated from 229 countries and territories for three points in time: 1990, 2000 and 2005.

The reporting framework for FRA 2005 is based on the thematic elements of sustainable forest management acknowledged in intergovernmental forest-related fora and includes more than 40 variables related to the extent, condition, uses and values of forest resources. More information on the FRA 2005 process and the results - including all the country reports - is available on the FRA 2005 Web site (www.fao.org/forestry/fra2005).

The Global Forest Resources Assessment process is coordinated by the Forestry Department at FAO headquarters in Rome. The contact person for matters related to FRA 2005 is:

Mette Løyche Wilkie
Senior Forestry Officer
FAO Forestry Department
Viale delle Terme di Caracalla
Rome 00100, Italy

E-mail: Mette.LoycheWilkie@fao.org

Readers can also use the following e-mail address: fra@fao.org

Report preparation and contact person

This report has been prepared by:

Dusan Jovic (National Correspondent)
Republic of Serbia-Ministry of Agriculture, Forestry and Water Management;
Directorate of Forests
Omladinskih brigada 1.
Belgrade, 11070
Serbia and Montenegro
Tel: +381 63 319 628
Fax: +381 11 311 76 11
Mail: djjovic@net.yu

Other professionals involved in the reporting process:

Prof. Dr Milan Medarevic
Anita Svilicic, forestry engineer
Prof. Dr Dragan Karadzic
Prof. Dr Ljubodrag Mihajlovic
Aleksandar Ceranic, forestry engineer
Snezana Stajic, forestry engineer
Ranko Kankaras, forestry engineer
Gordana Ivanovic, forestry engineer
Srboljub Milic, forestry engineer
Mirjana Stingic, forestry engineer
Rastko Jankovic, forestry engineer

Contents

1 Table T1 – Extent of Forest and Other wooded land

1.1 FRA 2005 Categories and definitions

Category	Definition
Forest	Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10 percent, or trees able to reach these thresholds *in situ*. It does not include land that is predominantly under agricultural or urban land use.
Other wooded land	Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5-10 percent, or trees able to reach these thresholds *in situ*; or with a combined cover of shrubs, bushes and trees above 10 percent. It does not include land that is predominantly under agricultural or urban land use.
Other land	All land that is not classified as "Forest" or "Other wooded land".
Other land with tree cover (Subordinated to "Other land")	Land classified as "Other land", spanning more than 0.5 hectares with a canopy cover of more than 10 percent of trees able to reach a height of 5 meters at maturity.
Inland water bodies	Inland water bodies generally include major rivers, lakes and water reservoirs.

1.2 National data

1.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT	H	Land area, Inland water	2000	
State Statistical Office	M/L	Forest cover, growing stock	1990, 2000	Statistical Bulletin "Forestry"; national inventory data from 1979. Not completely comparative with main classes.
Faculty of Forestry	M/L	Forest cover, growing stock	2004	Available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M	Forest cover, growing stock	2003	Official data of two PE's.

1.2.2 Classification and definitions

National class	Definition
Forest	A forest is every area over 5 are covered with forest trees in the form of stands having a protective function but is used for production of forest assortments or has a special purpose. Tree line paths, parks in inhabited places, forest tree nurseries, and groups of forest trees on an area under 5 are are not considered a forest.
High forest	High forests are those originated mainly from seed.
Coppice	Coppices are forests, which originated mainly from shoots from stumps.
Shrubs	Shrubs are devastated coppices of small growth and stunted trees mostly used for grazing and browsing of livestock.
Bushes	Bushes (shrubberies) are devastated coppices where bushes prevail.
Maquis	Specific degradation forms in Mediterranean areas. Maquis are evergreen coppices originated by repression of English oak in the Mediterranean climatic zone of our country.
Other forest land (OFL)	Land which is predominantly used for forestry purposes, but without trees on it, and available for afforestation.

1.2.3   Original data

National land use classes	1000 hectares	
	1979	**1995**
High forests	1.326	1.290
Coppice	1.201	1.360
Shrubs, bushes, maquis	331	245
OFL	519	585
Other land	6.840	6.632
Orchards	258	267
TOTAL land area	**10.475**	**10.379**

1.3   Analysis and processing of national data

1.3.1   Calibration

Source	Total land area (1000 ha)	Calibration factor
National data 1979 (land area)	10475	*0.973747017*
National data 1995 (land area)	10.379	*0.982753637*
FAOSTAT (land area)	10.200	*Not applicable*

1.3.2   Estimation and forecasting

National land use classes	1000 hectares				
	Calibrated data		**1990**[1]	**2000**[2]	**2005**[3]
	1979	**1995**			
High forests	1291.2	1267.8	1275.1	1260.5	1253.2
Coppice	1169.5	1336.5	1284.3	1388.7	1440.9
Shrubs, bushes, maquis	322.3	240.8	266.3	215.3	189.9
OFL	505.4	574.9	553.2	596.6	618.3
Other land	6660.4	6517.6	6562.2	6473.0	6428.3
Orchards	251.2	262.4	258.9	265.9	269.4
TOTAL land area	**10200**	**10200**	**10200**	**10200**	**10200**

[1] Estimated data (linear interpolation)
[2, 3] Forecasted data (linear extrapolation)

1.4   Reclassification into FRA 2005 classes

National Land use Classes	Percentage of a National class belonging to a FRA Class				
	Forests	**Other Wooded Land**	**Other Land**	**Other Land with Tree Cover**	**Inland Water**
High forest	100%				
Coppice	100%				
Shrubs, bushes and maquis		100%			
OFL		100%			
Other land			100%		
Orchards				100%	

Source: Statistical Office of Serbia and Montenegro

1.5   Data for National reporting table T1

FRA 2005 Categories	Area (1000 hectares)		
	1990	**2000**	**2005**
Forest	2559	2649	2694
Other wooded land	820	812	808
Other land	6821	6739	6698
...of which with tree cover [1]	259	266	269
Inland water bodies[2]	17	17	17
TOTAL	**10217**	**10217**	**10217**

[1]   Area of "Other land with tree cover" is included in the area reported under "Other land" and should therefore be excluded when calculating the total area for the country.

[2]   FAOSTAT figure

1.6   Comments to National reporting table T1

The national class Other Forest Land (OFL) is likely to include areas that could be counted as forest but lack of information does not allow to make separation into Forest and Other wooded land.

State of forest in other parts of Serbia obtained by balancing from actual forest management plans

Significantly reducing reported total Forest areas compared with FRA 2000 for proposed years, arisen because of entirely using of European criteria and terminology, whereas shrubs, bushes and maquis are now in category Other wooded land.

The increase of total area of Forest and Other wooded land is result of actualisation of Montenegrin data of private forests.

2   Table T2 – Ownership of Forest and Other wooded land

2.1   FRA 2005 Categories and definitions

Category	Definition
Private ownership	Land owned by individuals, families, private co-operatives, corporations, industries, religious and educational institutions, pension or investment funds, and other private institutions.
Public ownership	Land owned by the State (national, state and regional governments) or government-owned institutions or corporations or other public bodies including cities, municipalities, villages and communes.
Other ownership	Land that is not classified either as "Public ownership" or as "Private ownership".

2.2   National data

2.2.1   Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	M/L	Ownership category	1990, 2000	Statistical Bulletin "Forestry"; national inventory data from 1979. Not completely comparative with main classes.
Faculty of Forestry	M/L	Ownership category	2004	Unofficial data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Ownership category	2003	Official data of two PE's, but for some of main classes.
Directorate of Forests of Serbia	L	Ownership category	2002	Secondary information of ownership category
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	L	Ownership category	2002	Secondary information of ownership category

2.2.2   Classification and definitions

National class	Definition
Private ownership	Land owned by individuals.
State ownership	Land owned by the State or government-owned institutions or co-operatives or other public bodies including cities, churches and educational institutions.

2.2.3   Original data

T1 used as input.

2.3   Analysis and processing of national data

2.3.1   Calibration

Not applicable.

2.3.2   Estimation and forecasting

Not needed.

2.4   Reclassification into FRA 2005 classes

National Classes of Ownership	Percentage of a National Class belonging to a FRA Class		
	Public Ownership	Private Ownership	Other or unspecified ownership
Forests	54%	46%	0
OWL	73%	27%	0

2.5   Data for National reporting table T2

Ownership	Area (1000 hectates)			
	Forest		Other wooded land	
	1990	2000	1990	2000
Private ownership	1177	1219	221	219
Public ownership	1382	1430	599	593
Other ownership	0	0	0	0
TOTAL	**2559**	**2649**	**820**	**812**

2.6   Comments to National reporting table T2

State of forest in other parts of Serbia obtained by balancing from actual forest management plans.

New and accurate data regarding to the ownership structure will be provide after finishing national inventory in 2006.

3   Table T3 – Designated function of Forest and Other wooded land

National data for reporting on Designated functions of Forest and Other wooded land is Insufficient.

4   Table T4 – Characteristics of Forest and Other wooded land

4.1   FRA 2005 Categories and definitions

Category	Definition
Primary	Forest / Other wooded land of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Modified natural	Forest / Other wooded land of naturally regenerated native species where there are clearly visible indications of human activities.
Semi-natural	Forest / Other wooded land of native species, established through planting, seeding or assisted natural regeneration.
Productive plantation	Forest / Other wooded land of introduced species and in some cases native species, established through planting or seeding mainly for production of wood or non wood goods.
Protective plantation	Forest / Other wooded land of native or introduced species, established through planting or seeding mainly for provision of services.

4.2   National data

4.2.1   Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
FAOSTAT	M	Forest cover, Forest plantations,	2001	GFRA 2000
State Statistical Office	L	Forest cover and growing stock	1990, 2000	Statistical Bulletin "Forestry"; national inventory data from 1979. Not completely comparative with main classes.
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	L	Forest cover and growing stock structure	2002	State forests structure according to the designated functions

4.2.2   Classification and definitions

National class	Definition
Primary forests	Forest of native species, where there are no clearly visible indications of human activities and the ecological processes are not significantly disturbed.
Semi-natural forests	Forest of naturally regenerated native species where there are clearly visible indications of human activities, as well as forests established through planting, seeding or assisted natural regeneration.
Plantations	Forest of native species and in some cases introduced species, established through planting or seeding mainly for production of wood or non wood goods, as well as protecting functions mainly for soil protection.

4.2.3   Original data

T1 used as input.

4.3   Analysis and processing of national data

4.3.1   Calibration

Not applicable.

4.3.2 Estimation and forecasting

Used according to the available data for Autonomous Province Kosovo and Metohija.

4.4 Reclassification into FRA 2005 classes

Not needed.

4.5 Data for National reporting table T4

FRA 2005 Categories	Area (1000 hectares)					
	Forest			Other wooded land		
	1990	**2000**	**2005**	**1990**	**2000**	**2005**
Primary	4	4	4	0	0	0
Modified natural	95	105	115	776	768	686
Semi-natural	2421	2501	2536	44	44	122
Productive plantation	39	39	39	0	0	0
Protective plantation	0	0	0	0	0	0
TOTAL	**2559**	**2649**	**2694**	**820**	**812**	**808**

4.6 Comments to National reporting table T4

The area of Primary forest and Productive plantations are constant over the reporting period. The distribution on Modified natural forest and Semi-natural forest is based on expert estimate.

5 Table T5 – Growing stock

5.1 FRA 2005 Categories and definitions

Category	Definition
Growing stock	Volume over bark of all living trees more than X cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of Y cm, and may also include branches to a minimum diameter of W cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of Z cm or more.

5.2 National data

5.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	L	Forest cover and growing stock	1990, 2000	Statistical Bulletin "Forestry"; national inventory data from 1979.
Faculty of Forestry	M/L	Growing stock	2004	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Growing stock	2003	Official data of two PE's.
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	M/L	Forest cover and growing stock structure	2002	Total growing stock of Montenegro.

5.2.2 Classification and definitions

National class	Definition
Growing stock	Volume over bark of all living trees more than 11 cm in diameter at breast height (or above buttress if these are higher). Includes the stem from ground level or stump height up to a top diameter of 7 cm, and may also include branches to a minimum diameter of 7 cm.
Commercial growing stock	The part of the growing stock of species that are considered as commercial or potentially commercial under current market conditions, and with a diameter at breast height of 11 cm or more.

5.2.3 Original data

Forests area by kind of stand (1995)

Kind of Stand	Monte-Negro	S E R B I A				Serbia & Montenegro
		Central	Vojvodina	Kosovo & Metohija	Total	
		1 000 ha				
Broadleaved	184	1,120	48	266	1,434	1,618
Coniferous	39	95	2	11	108	147
∑ Pure	223	1,215	50	277	1,542	1,765
Broadleaved	190	521	50	130	701	891
Coniferous	36	16	1	11	28	64
Broad/Conif	95	67	2	10	79	173
∑Mixed	321	604	53	151	808	1,129
TOTAL	544	1,819	103	429	2,350	2,894

Source: Statistical Office of Serbia and Montenegro;
- in accordance to the FRA 2000.

Wood volume by kind of stand (1995)

Kind of Stand	Monte-negro*	S E R B I A				Serbia & Montenegro
		Central	Vojvodina	Kosovo & Metohija	Total	
		In millions of m^3				
Broadleaved	23	125	5.9	19	149	171
Coniferous	6	10	0.1	1	12	19
$\sum$ Pure	29	135	6.0	20	161	190
Broadleaved	8	52	8.8	6	67	74
Coniferous	8	2	0.1	2	5	13
Broad/Con[1]	27	16	0.1	2	17	45
$\sum$Mixed	43	70	9.0	10	89	132
TOTAL	72	205	15	30	250	322

Source: State Statistical Office of Serbia and Montenegro; FRA 2000
*Data for Montenegro is concerning state owned forests only.
[1] Ratio of broadleaved and coniferous mixed stands is 16:29 for coniferous.

Volume per unit of forest area and kind of stands (1995)

Type of Stand	Monte-negro*	S E R B I A				Serbia & Montenegro
		Central	Vojvodina	Kosovo & Metohija	Total	
		Volume in m^3/ha				
Broadleaved	122.3	111.6	120.3	69.5	103.8	105.6
Coniferous	168.4	105.3	38.0	151.7	111.1	129.2
$\sum$ Pure	130.4	1111	123.7	72.8	104.3	107.6
Broadleaved	40.8	99.8	166.6	45.7	95.6	83.1
Coniferous	214.3	125.0	37.1	203.9	178.6	203.1
Broad/Conifer	289.2	238.8	81.7	208.9	215.2	260.1
$\sum$Mixed	133.1	115.9	160.6	67.2	110.1	117.0
AVERAGE	132.0	112.7	143.7	70.8	106.3	111.3

Source: State Statistical Office of Serbia and Montenegro; GFRA 2000.
- Data for Montenegro is concerning state owned forests.

Forest area 1995 (in accordance with T1) = 2604 000 hectares.

5.3   Analysis and processing of national data

The average growing stock per hectare (1995) is multiplied with T1 Forest area (1995).

5.3.1   Calibration

Not needed.

5.3.2   Estimation and forecasting

THE ESTIMATED VALUES ARE BASED ON AN EXPERT ESTIMATE OF A NET ANNUAL INCREMENT OF 1 M^3 PER HECTARE AND YEAR AND FOREST AREA IN T1.

5.4 Reclassification into FRA 2005 classes

Not needed.

5.5 Data for National reporting table T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	272	308	327	8	5	3
Commercial growing stock	ID	ID	ID	0	0	0

Specification of country threshold values	Unit	Value	Complementary information
1. Minimum diameter at breast height of trees included in Growing stock (X)	cm	11	Minimum diameter for coppice forests at breast height is 6 cm
2. Minimum diameter at the top end of stem (Y) for calculation of Growing stock	cm	7	
3. Minimum diameter of branches included in Growing stock (W)	cm	7	
4. Minimum diameter at breast height of trees in Commercial growing stock (Z)	cm	11	Minimum diameter for coppice forests at breast height is 6 cm
5. Volume refers to "Above ground" (AG) or "Above stump" (AS)	AG / AS	AG	
6. Have any of the above thresholds (points 1 to 4) changed since 1990	Yes/No	No	
7. If yes, then attach a separate note giving details of the change	Attachment	-	

5.6 Comments to National reporting table T5

THE ESTIMATED VALUES ARE BASED ON AN EXPERT ESTIMATE OF A NET ANNUAL INCREMENT OF 1 M^3 PER HECTARE AND YEAR AND FOREST AREA IN T1.

Growing stock for other wooded land provided by expert estimation. There is on going process of national inventory of forests in Serbia in accordance with European criteria and methodology. Whole process is planed to be finish at the end of year 2006.

6   Table T6 – Biomass stock

6.1   FRA 2005 Categories and definitions

Category	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.

6.2   National data

6.2.1   Data sources

6.2.2   Classification and definitions

National class	Definition
Above-ground biomass	All living biomass above the soil including stem, stump, branches, bark, seeds, and foliage.
Below-ground biomass	All living biomass of live roots. Fine roots of less than 2mm diameter are excluded because these often cannot be distinguished empirically from soil organic matter or litter.
Dead wood biomass	All non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than 10 cm in diameter.

6.2.3   Original data (1995)

Species	Growing stock mill. m3	Basic density tonnes/m3	Biomass Exp. Fact	Root-Shoot Ratio	Dead/Live Ratio
Beech (Fagus Moesiaca)	116.645	0.58	1.40	0.26	0.14
Bitter oak (Quercus cerris)	16.823	0.58	1.40	0.35	0.14
Sessile oak (Quercus petrea)	12.690	0.58	1.40	0.35	0.14
Spruce (Picea Abies)	12.196	0.40	1.30	0.46	0.14
Fir (Abies Alba)	8.689	0.40	1.30	0.46	0.14
Hornbeam (Carpinus Orientalis)	5.775	0.63	1.40	0.43	0.14
English oak (Quercus Robur)	5.092	0.58	1.40	0.35	0.14
Hungarian oak (Quercus Farneto)	4.916	0.58	1.40	0.35	0.14
Black pine (Pinus Nigra)	4.183	0.42	1.30	0.46	0.14
Silver lime (Tilia Argentea)	2.742	0.43	1.40	0.43	0.14
Other species	100.249	0.50	1.35	0.26	0.14
TOTAL	290				

Data imported from T5

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	272	308	327	8	5	3
Commercial growing stock	ID	ID	ID	0	0	0

6.3   Analysis and processing of national data

Species	GS (mill. m3 o.b.)	Wood dens	BEF	R/S Ratio	D/L Ratio	AGB	BGB	DWB
Beech (Fagus Moesiaca)	116.64499	0.58	1.4	0.26	0.14	94.71574	24.62609	16.70786
Bitter oak (Quercus cerris)	16.822811	0.58	1.4	0.35	0.14	13.66012	4.781043	2.581763
Sessile oak (Quercus petrea)	12.689958	0.58	1.4	0.35	0.14	10.30425	3.606486	1.947502
Spruce (Picea Abies)	12.196459	0.4	1.3	0.46	0.14	6.342159	2.917393	1.296337
Fir (Abies Alba)	8.6894877	0.4	1.3	0.46	0.14	4.518534	2.078525	0.923588
Hornbeam (Carpinus Orientalis)	5.7747141	0.63	1.4	0.43	0.14	5.093298	2.190118	1.019678
English oak (Quercus Robur)	5.0916497	0.58	1.4	0.35	0.14	4.13442	1.447047	0.781405
Hungarian oak (Quercus Farneto)	4.9161836	0.58	1.4	0.35	0.14	3.991941	1.397179	0.754477
Black pine (Pinus Nigra)	4.1829861	0.42	1.3	0.46	0.14	2.28391	1.050599	0.466831
Silver lime (Tilia Argentea)	2.7416575	0.43	1.4	0.43	0.14	1.650478	0.709705	0.330426
Other species	100.2491	0.5	1.35	0.26	0.14	67.66814	17.59372	11.93666
TOTAL	**290.00**					214.363	62.3979	38.74652

**Calculation of general conversion factors
between biomass and growing stock**

AGB / GS o.b.	0.7392
BGB / GS o.b	0.2152
DWB / GS o.b.	0.1336

6.3.1   Calibration

Not needed.

6.3.2   Estimation and forecasting

FRA 2005 Categories	Volume (million cubic meters over bark)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Growing stock	272	308	327	8	5	3

6.4   Reclassification into FRA 2005 classes

Not needed.

6.5   Data for National reporting table T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	201.1	227.7	241.7			
Below-ground biomass	58.5	66.3	70.4			
TOTAL	**259.6**	**294.0**	**312.1**			
Dead wood biomass	36.3	41.2	43.7			
TOTAL	**295.9**	**335.2**	**355.8**			

6.6   Comments to National reporting table T6

7 Table T7 – Carbon stock

7.1 FRA 2005 Categories and definitions

Category	Definition
Carbon in above-ground biomass	Carbon in all living biomass above the soil, including stem, stump, branches, bark, seeds, and foliage.
Carbon in below-ground biomass	Carbon in all living biomass of live roots. Fine roots of less than 2 mm diameter are excluded, because these often cannot be distinguished empirically from soil organic matter or litter.
Carbon in dead wood biomass	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than or equal to 10 cm in diameter or any other diameter used by the country.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter chose by the country for lying dead (for example 10 cm), in various states of decomposition above the mineral or organic soil. This includes the litter, fumic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils (including peat) to a specified depth chosen by the country and applied consistently through the time series.

7.2 National data

7.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
See T5 and T6				

7.2.2 Classification and definitions

National class	Definition
Carbon in above-ground biomass	FRA 2005 definition used.
Carbon in below-ground biomass	FRA 2005 definition used.
Carbon in dead wood biomass	Carbon in all non-living woody biomass not contained in the litter, either standing, lying on the ground, or in the soil. Dead wood includes wood lying on the surface, dead roots, and stumps larger than 10 cm in diameter.
Carbon in litter	Carbon in all non-living biomass with a diameter less than a minimum diameter of 10 cm for lying dead, in various states of decomposition above the mineral or organic soil. This includes the litter, fumic, and humic layers.
Soil carbon	Organic carbon in mineral and organic soils in soil profile to a parent rock (substratum).

7.2.3 Original data

Data imported from T6

FRA 2005 Categories	Biomass (million metric tonnes oven-dry weight)					
	Forest			Other wooded land		
	1990	2000	2005	1990	2000	2005
Above-ground biomass	201.1	227.7	241.7			
Below-ground biomass	58.5	66.3	70.4			
TOTAL	**259.6**	**293.9**	**312.1**			
Dead wood biomass	36.3	41.2	43.7			
TOTAL	**295.9**	**335.1**	**355.8**			

7.3   Analysis and processing of national data

Multiply biomass stock from T6 by 0.5 gives

	Carbon stock (million tonnes)		
	1990	**2000**	**2005**
Carbon in above-ground biomass	100.5	113.8	120.9
Carbon in below-ground biomass	29.3	33.1	35.2
Carbon in dead wood biomass	18.2	20.6	21.8

7.3.1   Calibration

Not needed.

7.3.2   Estimation and forecasting

Not needed.

7.4   Reclassification into FRA 2005 classes

Not needed.

7.5   Data for National reporting table T7

FRA 2005 Categories	Carbon (Million metric tonnes)					
	Forest			Other wooded land		
	1990	**2000**	**2005**	**1990**	**2000**	**2005**
Carbon in above-ground biomass	100.5	113.8	120.9			
Carbon in below-ground biomass	29.3	33.1	35.2			
Sub-total: Carbon in living biomass	**129.8**	**146.9**	**156.1**			
Carbon in dead wood	18.2	20.6	21.8			
Carbon in litter	ID	ID	ID	ID	ID	ID
Sub-total: Carbon in dead wood and litter	18.2	20.6	21.8			
Soil carbon to a depth of _____ cm	ID	ID	ID	ID	ID	ID
TOTAL CARBON	**148.0**	**167.5**	**177.9**			

7.6   Comments to National reporting table T7

8   Table T8 – Disturbances affecting health and vitality

8.1   FRA 2005 Categories and definitions

Category	Definition
Disturbance by fire	Disturbance caused by wildfire, independently whether it broke out inside or outside the forest/OWL.
Disturbance by insects	Disturbance caused by insect pests that are detrimental to tree health.
Disturbance by diseases	Disturbance caused by diseases attributable to pathogens, such as a bacteria, fungi, phytoplasma or virus.
Other disturbance	Disturbance caused by other factors than fire, insects or diseases.

8.2   National data

8.2.1   Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Yugoslav Survey	M/L	Disturbance	1990-1997	
Statistical office of Serbia and Montenegro		Disturbance	1990-2000	

8.2.2   Classification and definitions

National class	Definition
FRA 2005 categories applied	Information generated according to FRA 2005 definitions.

8.2.3   Original data

Damage in state forests by causes in Serbia and Montenegro

Year	Total damages in 1000 m^3	Share of causes in %	
		Fires	Other*
1990	142	56.7	113
1991	79	20.9	3,1
1992	174	47.5	9.6
1993	124	40.5	6.7
1994	92	6.9	27.3
1995	67	6.9	23.5
1996	61	33.4	22.4
1997	51	19.2	37.0

*Insects, plant diseases, accidents. *The most frequent parasitic and saprophytic fungus are listed in Annex 1.*

Year	Total 1000 ha	Fire	Insects/ Diseases	Others*
1990	5	3	1	1
1991	6	1	1	4
1992	4	2	1	1
1993	11	7	3	1
1994	9	2	6	1
1995	12	2	8	2
1996	20	5	14	1
1997	106	1	104	1
1998	87	3	84	0
1999	2	0	2	0
2000	26	20	3	3

* Accidents, natural disaster, domestic animals, game

8.3   Analysis and processing of national data

Reported figure for 1990 = Average area damaged in the period 1990-1992.
Reported figure for 2000 = Average area damaged in the period 1998-2000.

8.3.1   Estimation and forecasting

Not needed.

8.4   Reclassification into FRA 2005 classes

National Classes	Percentage of a National Classes belonging to a FRA Classes			
	Disturbance by fire	Disturbance by insects	Disturbance by diseases	Other disturbance
Fires	100	0	0	0
Insect and disease[1]	0	80	20	0
Storm, wind, snow and other identifiable abiotic factors	0	0	0	100

8.5   Data for National reporting table T8

FRA-2005 Categories	Average annual area affected (1000 hectares)			
	Forests and OWL		Other wooded land[1]	
	1990	2000	1990	2000
Disturbance by fire	2	8		
Disturbance by insects	1	30		
Disturbance by diseases	*	*		
Other disturbance	2	1		

* Disturbances by insects and diseases are shown together. [1] There are no separated available data for other wooded land.   [2] Disturbances of natural disaster, forest siccation etc.

8.6   Comments to National reporting table T8

Disturbances by insects and diseases are shown together.
There are no separated available data for Other wooded land
Other disturbances are of natural disaster, forest siccation etc.
Data for 1990, available only for former SFRY in absolute value, while data of former republics are not available because of methodology approach
In year 2000, data of disturbances made by insects are mutual also for disturbances caused by diseases
Data's are general as well as for forest also for other wooded land
There is no national classification for disturbances caused by insects and diseases, but these disturbances are shown in total

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[1] The original source does not distinguish between insects and other diseases

9 Table T9 – Diversity of tree species

9.1 FRA 2005 Categories and definitions

Category	Definition
Number of native tree species	The total number of native tree species that have been identified within the country.
Number of critically endangered tree species	The number of native tree species that are classified as "Critically endangered" in the IUCN red list.
Number of endangered tree species	The number of native tree species that are classified as "Endangered" in the IUCN red list.
Number of vulnerable tree species	The number of native tree species that are classified as "Vulnerable" in the IUCN red list.

9.2 National data

9.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
IUCN	H	Critically endangered, Endangered, Vulnerable	2000	

9.2.2 Classification and definitions

According to IUCN.

9.2.3 Original data

9.3 Data for National reporting table T9

FRA 2005 Categories	Number of species (year 2000)
Native tree species	48
Critically endangered tree species	0
Endangered tree species	0
Vulnerable tree species	0

9.4 Comments to National reporting table T9

"Biodiversity of Yugoslavia" (1995)
   Relic, endemic and endangered tree species

No.	tree species		status
1	White poplar	*Populus alba*	at risk
2	Gray poplar	*Populus canescens*	rare
3	Common elm	*Ulmus minor (glabra)*	rare - endangered
4	Mountain elm	*Ulmus montana*	rare
5	Spreading elm	*Ulmus effusa*	rare
6	Common walnut	*Juglans regia*	rare - endangered

7	European nettle-tree	*Celtis australis*	rare - endangered
8	Wild cherry	*Prunus avium*	at risk
9	Wild pear	*Pyrus pyraster*	at risk
10	Crab apple	*Pyrus malus*	at risk
11	Wild plum	*Prunus pseudarmeniaca*	rare - endangered
12	Wild service tree	*Sorbus torminalis*	at risk
13	Mountain ash	*Sorbus aucuparia*	rare
14	Common whitebeam	*Sorbus aria*	at risk
15	Sweet chestnut	*Aesculus carnea*	rare - endangered
16	Pubescent oak	*Quercus pubescens*	rare - endangered
17	Vergilius's oak	*Quercus virgiliana*	rare - endangered
18	Aspen	*Populus tremula*	at risk
19	Birch	*Betula pendula*	rare - endangered
20	Turkish hazel	*Corylus colurna*	rare - endangered
21	White ash	*Fraxinus excelsior*	rare - endangered
22	Norway maple	*Acer platanoides*	rare
23	Balkan maple	*Acer heldreichii*	at risk
24	Serbian spruce	*Picea omorica*	endangered
25	Macedonian pine	*Pinus peuce*	rare - endangered
26	White bark pine	*Pinus heldreichii*	endangered
27	Mountain pine	*Pinus mugo*	at risk
28	Planes	*Platanus sp. (orientalis)*	rare
29	Yew	*Taxus baccata*	endangered
30	Sessile oak	*Quercus petraea*	rare
31	Lombardy poplar	*Trollius europaeus*	endangered
32	Holly	*Ilex aquifolium*	endangered

10 Table T10 – Growing stock composition

10.1 FRA 2005 Categories and definitions

Beech	(Fagus Moesiaca)
Bitter oak	(Quercus Cerris)
Sessile oak	(Quercus Petrea)
Spruce	(Picea Abies)
Fir	(Abies Alba)
Hornbeam	(Carpinus Betulus)
Pedunculate oak	(Quercus Robur)
Hungarian oak	(Quercus Farneto)
Black pine	(Pinus Nigra)
Silver lime	(Tilia Argentea)

10.2 National data

10.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	L	Forest cover and growing stock	1990, 2000	Statistical Bulletin "Forestry"; national inventory data from 1979.
Faculty of Forestry	M/L	Growing stock	2004	Manual book and guidelines for collection of field data (inventory) in Serbia; collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Growing stock	2003	Official data of two PE's.
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	M/L	Forest cover and growing stock structure	2002	Total growing stock of Montenegro.

10.2.2 Original data

Data imported from 6.2.3.

10.3 Analysis and processing of national data

The percentage of volume per species (1995) has been applied to growing stock 1990 and 2000

10.3.1 Calibration

Not applicable.

10.3.2 Estimation and forecasting

10.4 Data for National reporting table T10

Rank	Common name	Scientific name	Growing Stock in Forests (million cubic meters)	
			1990	**2000**
1st	Beech	*Fagus Moesiaca*	109.4	123.9
2nd	Bitter oak	*Quercus Cerris*	15.8	17.9
3rd	Sessile oak	*Quercus Petrea*	11.9	13.5
4th	Spruce	*Picea Abies*	11.4	13.0
5th	Fir	*Abies Alba*	8.2	9.2
6th	Hornbeam	*Carpinus Betulus*	5.4	6.1
7th	Pedunculate oak	*Quercus Robur*	4.8	5.4
8th	Hungarian oak	*Quercus Farneto*	4.6	5.2
9th	Black pine	*Pinus Nigra*	3.9	4.4
10th	Silver lime	*Tilia Argentea*	2.6	2.9
Remain			94.0	106.5
		TOTAL	272	308

10.5 Comments to National reporting table T10

11 Table T11 – Wood removal

11.1 FRA 2005 Categories and definitions

Category	Definition
Industrial wood removal	The wood removed (volume of roundwood over bark) for production of goods and services other than energy production (woodfuel).
Woodfuel removal	The wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

11.2 National data

11.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	M/L	Cutting in forests and outside forests	1990, 2000	Statistical Bulletin "Forestry"; Statistical yearbooks.
Faculty of Forestry	M/L	Cutting in forests	2004	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Cutting in forests	2003	Official data of two PE's (forest management plans).
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	M/L	Cutting in forests	2002	Official data of Statistical Office and data from forest management plans of Directorate of Forests of Montenegro.

11.2.2 Classification and definitions

National class	Definition
Total wood stock cut	Or gross volume covers cut industrial, technical wood and fuelwood – all produced forest assortments and total residue, so that they represent the total volume of wood removal measured on stump.
Industrial wood	It has favourable physical and chemical properties and is used for industrial (mechanical and chemical) processing.
Fuelwood	The wood removed for energy production purposes.

11.2.3 Original data

Cutting by assortments in Serbia and Montenegro

Year	Total 1000 m³	Technical wood 1000 m³	Fuelwood 1000 m³	Waste 1000 m³
1990	4,351	1,860	1,985	505
1992	3,452	1,472	1,573	407
1993	3,056	1,077	1,648	331
1994	3,110	1,247	1,502	361
1995	3,501	1,435	1,665	402
1996	3,520	1,374	1,715	431
1997	3,074	1,188	1,525	361
1998	3,137	1,306	1,432	400
1999[1]	2,930	1,214	1,373	343

Source: Yugoslav Survey 2000. [1] Without data for Kosovo and Metohija

Cutting by kind of stands in Serbia and Montenegro

Year	Broadleaved 000 м³	% increment	Coniferous 000 м³	% increment	Total 000 м³	% increment
1990	3,708	61	643	41	4,351	57
1991	3,431	57	723	46	4,154	54
1992	2,782	46	670	42	3,452	45
1993	2,575	43	481	30	3,056	40
1994	2,445	40	665	42	3,109	41
1995	2,845	47	656	41	3,501	46
1996	2,803	46	717	45	3,520	46
1997	2,528	42	546	35	3,074	40
1998	2,635	44	502	32	3,137	41
1999[1]	2,442	40	488	31	2,930	38
2000[1]	2,833	47	602	38	3,435	45

Source: Statistical Office of Serbia and Montenegro
[1] Without data for Kosovo and Metohija

11.3 Analysis and processing of national data

11.3.1 Estimation and forecasting

Linear extrapolation used for forecasting 2005 data.

11.4 Reclassification into FRA 2005 classes'

Not needed.

11.5 Data for National reporting table T11

FRA 2005 Categories	Volume in 1000 cubic meters of roundwood over bark					
	Forest			Other wooded land		
	1990	**2000**	**2005**	**1990**	**2000**	**2005**
Industrial roundwood	1852	1485	1301	8	6	5
Woodfuel	1954	1517	1299	32	25	22
TOTAL for Country	**3806**	**3002**	**2600**	**40**	**31**	**27**

11.6 Comments to National reporting table T11

Industrial roundwood and fuelwood in category of other wooded land was provided according to the estimation in the framework of State Statistical Office data in bulletin „Forestry" for years 1990 and 2000.
Significantly reducing of woodremoval amount in year 2000 is result of objective economic, technical and financial obstacles of which former FRY faced (international sanctions, looses of market, old machinery, etc)
Data for year 2005 was given by linear extrapolation of data from 1990 and 2000.

12 Table T12 – Value of wood removal

12.1 FRA 2005 Categories and definitions

Category	Definition
Value of industrial wood removal	Value of the wood removed for production of goods and services other than energy production (woodfuel).
Value of woodfuel removal	Value of the wood removed for energy production purposes, regardless whether for industrial, commercial or domestic use.

12.2 National data

12.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	M/L	Cutting in forests	1990, 2000	Statistical Bulletin "Forestry"; Statistical yearbooks.
Faculty of Forestry	M/L	Cutting in forests	2004	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Cutting in forests	2003	Official data of two PE's (forest management plans).
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	M/L	Cutting in forests	2002	Official data of Statistical Office and data from forest management plans of Directorate of Forests of Montenegro.

12.2.2 Classification and definitions

National class	Definition
Value of total wood stock cut	Value of gross volume covers cut industrial, technical wood and fuelwood – all produced forest assortments and total residue, so that they represent the total value and volume of wood removal measured on stump.
Value of industrial wood	It has favourable value of physical and chemical properties and is used for industrial (mechanical and chemical) processing.
Value of fuelwood	Value of the wood removed for energy production purposes.

12.2.3 Original data

Encompassed in table T12.

12.3 Analysis and processing of national data

12.3.1 Estimation and forecasting

Estimation and forecasting following the FRA 2005 Guidelines used for the years 1990 and 2005 according to the year 2000 data.

12.4 Reclassification into FRA 2005 classes

National Class	Percentage of a National Class belonging to a FRA 2005 Class (Value of Wood Removal)	Percentage of class not belonging to FRA 2005 class
	%	
Total wood cut	100	0
Price of roundwood	100	0
Price of wood fuel	100	0

12.5 Data for National reporting table T12

FRA 2005 Categories	Value of roundwood removal (1000 USD)					
	Forest			**Other wooded land**		
	1990	**2000**	**2005**	**1990**	**2000**	**2005**
Industrial roundwood	72228	57915	50739	312	234	195
Woodfuel	29310	22755	19485	480	375	330
TOTAL for Country	**101538**	**80670**	**70244**	**792**	**609**	**525**

12.6 Comments to National reporting table T12

Data for 1990, on the basis of interpolation of data from year 2000
Data for year 2005 provided in accordance of forecasting

13 Table T13 – Non-wood forest product removal

13.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

Category
Plant products / raw material
1.   Food
2.   Fodder
3.   Raw material for medicine and aromatic products
4.   Raw material for colorants and dyes
5.   Raw material for utensils, handicrafts & construction
6.   Ornamental plants
7.   Exudates
8.   Other plant products
Animal products / raw material
9.   Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Bush meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

13.2 National data

13.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Federal Statistical Office	L[1]	Utilisation non-wood forest products	1990, 2000	Statistical bulleting "Forestry"; Statistical Yearbooks.
Nature Protection Institute of the Republic of Serbia	L[1]	Utilisation non-wood forest products	2000	Report of trade of mushrooms, plants and animals under collection control.
Hunting organisation of Serbia	M	Utilisation and hunting of game	2001	Programme of hunting development in Serbia 2001-2010

[1] Data based on rough estimation.

13.2.2 Classification and definitions

National class	Definition
Non-Wood Forest Products	Non-wood forest products are forest products for human or animal consumption or for industrial purposes.

13.2.3 Original data

Encompassed in table T13.

13.3 Analysis and processing of national data

13.3.1 Estimation and forecasting

Not applicable because of non-persistent methodology approach for determining allowed amount for collecting NWFP.

13.4 Reclassification into FRA 2005 classes

National Class or single NWFP	Percentage a National class that falls in a FRA class of NWFP															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Berries	80		20													
Medicinal herbs			100													
Mushrooms	100															
Acorns		100														
Snails	100															
Frogs	100															
Game										100						
Game meet												100				

13.5 Data for National reporting table T13

FRA 2005 Categories	Scale factor	Unit	NWFP removal		
			1990	2000	2005
Plant products / raw material					
1. Food	1:1	tonnes	6576	2830	NDA
2. Fodder	1:1	tonnes	224	17	NDA
3. Raw material for medicine and aromatic products	1:1	tonnes	1168	371	NDA
4. Raw material for colorants and dyes			ID	ID	NDA
5. Raw material for utensils, handicrafts & construction			ID	ID	NDA
6. Ornamental plants			0	0	0
7. Exudates	1:1	tonnes	10	0	NDA
8. Other plant products	1:1	tonnes	37	27	NDA
Animal products / raw material					
9. Living animals[1]	1:1000	pcs	0.427	1.822	NDA
10. Hides, skins and trophies[2]	1:1000	pcs	915	381	NDA
11. Wild honey and bee-wax					
12. Bush meat	1:1	tonnes	1151	2931	NDA
13. Raw material for medicine	1:1	tonnes	0	0.5	NDA
14. Raw material for colorants			0	0	0
15. Other edible animal products			ID	ID	NDA
16. Other non-edible animal products			ID	ID	NDA

[1] Data for Serbia and Montenegro as a whole
[2] Data for Serbia and Montenegro as a whole

13.6 Comments to National reporting table T13

Besides the data of live animals and data for hides, skins and trophies, which are provided for Serbia and Montenegro as a whole, all other data are concerning the territory of Serbia There are no available data for Montenegro.

14 Table T14 – Value of non-wood forest product removal

14.1 FRA 2005 Categories and definitions

The following categories of non-wood forest products have been defined:

Category
Plant products / raw material
1.   Food
2.   Fodder
3.   Raw material for medicine and aromatic products
4.   Raw material for colorants and dyes
5.   Raw material for utensils, handicrafts & construction
6.   Ornamental plants
7.   Exudates
8.   Other plant products
Animal products / raw material
9.   Living animals
10. Hides, skins and trophies
11. Wild honey and bee-wax
12. Bush meat
13. Raw material for medicine
14. Raw material for colorants
15. Other edible animal products
16. Other non-edible animal products

14.2 National data

14.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
Federal Statistical Office	L[1]	Utilisation non-wood forest products, and game shooting	1990, 2000	Statistical bulleting "Forestry"; Statistical Yearbooks.
Nature Protection Institute of the Republic of Serbia	L[1]	Utilisation non-wood forest products	2000	Report of trade of mushrooms, plants and animals under collection control.
Hunting organisation of Serbia	M	Breeding, utilisation and hunting of game	2001	Programme of hunting development in Serbia 2001-2010

14.2.2 Classification and definitions

National class	Definition
Value of Non-Wood Forest Products	Value of non-wood forest products understand market price of forest products for human or animal consumption or for industrial purposes.

14.2.3 Original data

Encompassed in table T14.

14.3 Analysis and processing of national data

14.3.1 Estimation and forecasting

Not applicable because of non-persistent methodology approach for determining allowed amount for collecting NWFP.

14.4 Reclassification into FRA 2005 classes

Not needed.

14.5 Data for National reporting table T14

FRA 2005 Categories	Value of the of NWFP removed (1000 USD)		
	1990	**2000**	**2005**
Plant products / raw material 1. Food		*	
2. Fodder		*	
3. Raw material for medicine and aromatic products		*	
4. Raw material for colorants and dyes			
5. Raw material for utensils, handicrafts & construction			
6. Ornamental plants			
7. Exudates			
8. Other plant products		*	
Animal products / raw material 9. Living animals			
10. Hides, skins and trophies		7,290	
11. Wild honey and bee-wax		NDA	
12. Bush meat		1,569	
13. Raw material for medicine		*	
14. Raw material for colorants			
15. Other edible animal products			
16. Other non-edible animal products			
TOTAL	**NDA**	**12,573**	**NDA**

* no possibility to present separately only in total amount

14.6 Comments to National reporting table T14

There is no available data according to the presented classification and therefore no correct evidence of value of collected NWFP in Serbia and Montenegro
Data for hunting was accepted from "Programme of hunting development in Serbia 2001-2010", but it is related to the year 2001.
There are no data for the year 1990

15 Table T15 – Employment in forestry

15.1 FRA 2005 Categories and definitions

Category	Definition
Primary production of goods	Employment in activities related to primary production of goods, like industrial roundwood, woodfuel and non-wood forest products.
Provision of services	Employment in activities directly related to services from forests and woodlands.
Unspecified forestry activities	Employment in unspecified forestry activities.

15.2 National data

15.2.1 Data sources

References to sources of information	Quality (H/M/L)	Variable(s)	Year(s)	Additional comments
State Statistical Office	M/L	Employment	1990, 2000	Statistical Bulletin "Forestry"; Statistical yearbooks.
Faculty of Forestry	M/L	Employment	2004	Collection of available data from forest management plans;
Public Enterprises "Srbijasume" and "Vojvodinasume"	M/L	Employment	2003	Official data of two PE's (forest management plans).
Ministry of Agriculture, Forestry and Water Management of Montenegro and Directorate of Forests of Montenegro	M/L	Employment	2002	Official data of Statistical Office and data from forest management plans of Directorate of Forests of Montenegro.

15.2.2 Classification and definitions

National class	Definition
Primary production of goods	Employment in activities related to primary production of goods, like industrial roundwood, woodfuel and non-wood forest products.
Other forestry activities and services	Employment in other (unspecified) forestry activities and services related to forests.

15.2.3 Original data

Encompassed in table T15.

15.3 Analysis and processing of national data

15.3.1 Estimation and forecasting

Not needed.

15.4 Reclassification into FRA 2005 classes

National Class of employment	Percentage of a National Class belonging to a FRA Class				
	Wood Removal	NWFP Removal	Other Activity	Combination	Total
	%				
Employees	80	4	10	6	100

15.5 Data for National reporting table T15

FRA 2005 Categories	Employment (1000 person-years)	
	1990	2000
Primary production of goods	12	8
Provision of services	2	ID
Unspecified forestry activities	1	2
TOTAL	**15**	**10**

15.6 Comments to National reporting table T15

Data from Statistical Bulletin "Forestry", years 1990, 2000
Because of different methodology (national and FAO), excluding the primary production of goods, other categories didn't define clearly and estimation used
Main source for providing the data was Statistical Bulletin „Forestry" for years 1990, and 2000.
Because of different methodologies (FAO and national), except of primary production of goods, all other category in national context are not clearly define

16 Annex 1

List of the most frequent parasitic and saprophytic fungus

No.	Name of fungus	Significance
1	Armillaria mellea	+++
2	Armillaria ostoyae	+++
3	Bjerkandera adusta	++
4	Botrytis cinerea	+
5	Cenangium ferruginosum	+++
6	Ceratocystis ulmi	+++
7	Chondrostereum purpureum	++
8	Chrysomyxa abietis	+
9	Coleosporium senecionis	+
10	Coniophora cerebella	++
11	Coriolus vericolor	+++
12	Cronartium ribicola	+
13	Cronartium flaccidum	++
14	Cryptodiaporthe populea	+++
15	Cryphonectria parasitica	+++
16	Cyclaneusma minus	++
17	Cyclaneusma niveum	++
18	Daedalea quercina	++
19	Drepanopeziza punctiformis	+++
20	Fistulina hepatica	++
21	Fomes fomentarius	+++
22	Fomitopsis pinicola	+++
23	Fusarium spp.	+++
24	Ganoderma applanatum	+++
25	Ganoderma lucidum	++
26	Gloeophyllum abietinum	+
27	Gloeophyllum sepiarium	+
28	Gnomonia veneta	+++
29	Gremmeniella abietina	+++
30	Guignardia aesculi	+++
31	Herpotrichia juniperi	++
32	Heterobasidion annosum	+++
33	Hypoxylon deustum	+++
34	Hypoxylon multiforme	++
35	Hypoxylon nummularium	+

No.	Name of fungus	Significance
36	Inonotus dryadeus	++
37	Inonotus hispidus	++
38	Inonotus obliquus	+
39	Inonotus radiatus	+
40	Lachnellula willkommi	++
41	Laetiporus sulphureus	+++
42	Lentinus tigrinus	+
43	Lenzites betulina	+
44	Lenzites quercina	++
45	Lirula macrospora	++
46	Lirula nervisequia	++
47	Lophodermium piceae	+
48	Lophodermium pinastri	++
49	Lophodermium seditiosum	+++
50	Melampsorella caryophyllacearum	+++
51	Melampsora allii-populina	++
52	Melampsora larici-populina	+
53	Melampsora pinitorqua	+
54	Melanopus squamosus	++
55	Meria larycis	+
56	Meripilus giganteus	+
57	Merulius lacrymans	+++
58	Microsphaera alphitoides	+++
59	Mycosphaerella pini	+++
60	Mycosphaerella maculiformis	+
61	Naemacyclus minor;	++
62	Naemacyclus niveus	++
63	Nectria cinnabarina	+
64	Nectria galigena	++
65	Nectria coccinea	+++
66	Neobulgaria pura	+
67	Oudemansiella mucida	+
68	Panellus stipticus	+
69	Paxillus atrotomentosus	++
70	Peniophora gigantea	++

71	Peniophora quercina	++		93	Sparassis nemecii	++
72	Pestalotia hartigii	+		94	Sphaeropsis sapinea	+++
73	Pestalotiopsis funerea	+		95	Stereum hirsutum	++
74	Phaeolus schweinitzii	++		96	Stereum sanquinolentum	+
75	Phacidiopycnis pseudotsugae	+		97	Stereum rugosum	+
76	Phacaidum infestans	++		98	Taphrina populina	+
77	Phaeocryptopus gaumannii	+		99	Trametes cinnabarina	+
78	Phellinus hartigii	+++		100	Trametes gibbosa	+++
79	Phellinus igniarius	+++		101	Trametes hirsuta	+++
80	Phellinus pini	+++		102	Trametes versicolor	+++
81	Phellinus robustus	++		103	Trichaptum abietinum	++
82	Pholiota adiposa	++		104	Tyromyces stipticus	+
83	Pholiota aurivella	++		105	Valsa sordida	++
84	Pholiota destruens	++		106	Venturia populina	++
85	Phytophtora omnivora	+		107	Verticillium albo-atrum; Verticillium dahliae	+++
86	Piptoporus betulinus	++		108	Venturia tremulae	+
87	Pleorotus ostreatus	+++		109	Xylaria hypoxylon	+
88	Pleorotus sapidus	+		110	Xylaria polymorpha	+
89	Pythium debaryanum	+		111	Xylobolus frustulatus	+++
90	Rhabdoclyne pseudotsugae	+				
91	Schizophyllum commune	++				
92	Sparassis crispa	++				

+ - without economic significance as a wood destructors
++ - economic significant fungus
+++ - caused large economic damages

The most frequent pest insects in forests of Serbia

No.	Name of insect	Significance				
Ordo **ORTHOPTERA**				Fam **Acrididae**		
Fam**. Tettigonidae**				7.	Podisma pedestris	+
1.	Phasgonura viridissima	+		8.	Odontopodisma schmidti	++
2.	Saga pedo	+		9.	Caliptamus italicus	+
3.	Isophya speciosa	+		10.	Locusta migratorius	+
Fam. **Oecanthidae**				11.	Dociostaurus marocanus	+
4.	Oecanthus pellucens	+		12.	Anacridium aegyptium	+
Fam. **Gryllidae**				Ordo **HEMIPTERA**		
5.	Gryllus campestris	+		Fam. **Tingidae**		
Fam. **Gryllotalpidae**				13.	Stephanitis pyri	+
6.	Gryllotalpa gryllotalpa	+++		14.	Corytucha ciliata	++
				Fam. **Aradidae**		

15.	Aradus cinnamomeus.	++		43.	Phylloxera coccinea	+
Fam. **Lygaeidae**				44.	Phylloxera quercina	+
16.	Kleidocerys resedae	+		Fam. **Penphigidae**		
17.	Gastrodes abietum	+		45.	Prociphilus fraxini	+
18.	Gastrodes grossipes	+		46.	Pemphigus spirothecae	+
Ordo **HOMOPTERA**				47.	Pemphigus bursarius	+
Fam. **Cicadidae**				48.	Schizoneura ulmi	+
19.	Tettigia orni	+		49.	Schizoneura lanuginosa	+
20.	Tibicen plebeja	+		50.	Byrsocrypta ulmi	+
21.	Cicadetta montana	+		Fam. **Lachnidae**		
22.	Cicadetta dimissa	+		51.	Cinara pini	+
23.	Cicadetta tibialis	+		52.	Cinaropsis pilicornis	+
Fam. **Cercopidae**				53.	Todolachnus abieticolis	+
24.	Aphrophora alni	+		54.	Lachnus roboris	+
25.	Aphrophora salicina e	+		55.	Schizodryobius pallipes	+
Fam. **Membracidae**				Fam. **Thelaxidae**		
26.	Ceresa bubalus	+		56.	Mindarus abietinus	++
Fam. **Cicadellidae**				Fam. **Callaphidae**		
27.	Idiocerus populi	+		57.	Phyllaphis fagi	++
Familija **Psylidae**				58.	Eucallipterus tiliae	+
28.	Psyllophis fraxini	+		Fam. **Chaitophoridae**		
29.	Psylla buxi	+		59.	Chaetophorella aceris	+
30.	Psylla ulmi	+		Fam. **Aphididae**		
31.	Psylla pirisuga	+		60.	Liosomaphis abietinum	+
Fam. **Aleurodidae**				Fam. **Cryptococcidae**		
32.	Trialeurodes vaporariarum	+		61.	Cryptococcus fagisuga	+++
33.	Aleurochiton complanatus	+		62.	Pseudochermes fraxini	+
Fam. **Adelgidae**				Fam. **Kermesidae**		
34.	Eopineus strobi	++		63.	Kermes quercus	++
35.	Pineus pini	+		64.	Kermes roboris	+
36.	Dreyfusia nordmannianae	++		Fam. **Asterolecaniidae**		
37.	Sacchiphantes viridis	+++		65.	Asterodiaspis variolosa	+
38.	Adelges laricis	+++		Fam. **Coccidae**		
39.	Sacchiphantes abietis	+++		66.	Eulecanium tiliae	+
40.	Gilletteella coolezi	+		67.	Parthenolecanium corni	+++
Fam. **Phylloxeridae**				68.	Parthenolecanium fletcheri	+
41.	Acanthochermes quercus	+		69.	Parthenolecanium pomeranicum	+
42.	Phylloxera glabra	+		70.	Parthenolecanium rufulum	+

71.	Physokermes piceae	+++		Fam. **Lymexylonidae**	
72.	Physokermes hemicryphus	++	103.	Hylecoetus dermestoides	++
	Fam. **Diaspidide**		104.	Lymexylon navale	+
73.	Leucaspis pini	++		Fam. **Anobiidae**	
74.	Leucaspis pusilla	+	105.	Ptilinus pectinicornis	+
75.	Leucaspis loewi	+	106.	Anobium punctatum	+
76.	Lepidosaphes ulmi	++	107.	Anobium pertinax	+
77.	Carulaspis juniperi	++	108.	Xestobium rufovolosum	+
78.	Carulaspis carulei	+	109.	Ernobius mollis	+
79.	Chionaspis salicis	+	110.	Ernobius abietis	+
80.	Nuculaspis abietis	+	111.	Ernobius abietinus	+
81.	Nuculaspis abietis	+	112.	Ernobius pini	+
82.	Unaspis euonymi	+	113.	Ernobius angusticollis	+
83.	Pseudaulacaspis pentagona	+++	114.	Ernobius cupressi	+
84.	Quadraspidiotus perniciosus	+		Fam**. Bostrychidae**	
	Ordo **THYSANOPTERA**		115.	Bostrychus capucinus	+
	Fam. **Tripidae**			Fam. **Lyctidae**	
85.	Taeniotrips laricivorus	+	116.	Lyctus linearis	+
	Ordo **COLEOPTERA**		117.	Lyctus pubescens	+
	Fam. **Lucanidae**		118.	Lyctus brunneus	+
86.	Lucanus cervus	+		Fam. **Elateridae**	
87.	Dorcus paralelopipedus	+	119.	Lacon murinus	+
88.	Platycerus caraboides	+	120.	Dolopius marginatus	+
89.	Sinodendron cylindricum	+	121.	Agriotes lineatus	+
	Fam. **Scarabaeidae**		122.	Elater sanguineus	+
90.	Melolontha melolontha	+++	123.	Agriotes obscurus	+
91.	Melolontha hipocastani	+	124.	Athous obscurus	+
92.	Polyphulla fullo	++		Fam. **Buprestidae**	
93.	Anoxia orientalis	+	125.	Buprestis cupressi	++
94.	Anoxia pilosa	+	126.	Melanophila picta	+
95.	Rhizotrogus aequinoctialis	+	127.	Antaxia quadripunctata	+
96.	Amphimallon solstitialis	+	128.	Antaxia manca	+
97.	Anomala errans	++	129.	Phaenops cyanea	++
98.	Cetonia aurata	+	130.	Lampra rutilans	+
99.	Tropinota hirta	+	131.	Eurythyrea austriaca	+
100.	Oxythyrea funesta	+	132.	Dicerca aenea	+
101.	Valgus hemipterus	+	133.	Chalcophora mariana	+
102.	Oryctes nasicornis	+	134.	Chrysobothris affinis	+

135.	Capnodis tenebrioides	+	170.	Hylotrupes bajulus	++
136.	Buprestis 8-buttata	+	171.	Callidium violaceum	+
137.	Coroebus bifasciatus	++	172.	Callidium violaceum	+
138.	Coroebus rubi	+	173.	Rhopalopus macropus	+
139.	Agrilus biguttatus	+	174.	Pyrrhidium sanguineum	+
140.	Agrilus viridis	++	175.	Phymatodes testaceus	+
141.	Agrilus suvorovi	+	176.	Phymatodes alni	+
142.	Agrilus aurichalceus	+	177.	Xylotrechus rusticus	+
143.	Agrilus macroderus	+	178.	Xylotrechus arvicola	+
144.	Agrilus acutangulus	+	179.	Clytus arietis	+
145.	Agrilus angustulus	+	180.	Clytus lama	+
146.	Agrilus elongatus	+	181.	Clytus rhamni	+
147.	Agrilus sexguttatus	+	182.	Neoclytus acuminatus	+
Fam. **Tenebrionidae**			183.	Plagionotus arcuatus	+
148.	Opatrum sabulosum	+	184.	Plagionotus detritus	+
Fam. **Meloidae**			185.	Chloroporus varius	+
149.	Lytta vesicatoria	++	186.	Anaglyptus mysticus	+
Fam. **Cerambycidae**			187.	Dorcadion aethiops	+
150.	Megopis scabricornis	+	188.	Morimus funereus	+
151.	Ergates faber	+	189.	Lamia textor	+
152.	Prionus coriarius	+	190.	Monochamus galloprovincialis	++
153.	Rhagium bifasciatum	+	191.	Monochamus sartor	+
154.	Rhagium sycophanta	+	192.	Monochamus sutor	+
155.	Rhagium inquisitor	+	193.	Acanthocinus aedilis	+
156.	Rhagium mordax	+	194.	Acanthocinus griseus	+
157.	Leptura rubra	+	195.	Mesosa curculionides	+
158.	Strangalia maculata	+	196.	Mesosa nebulosa	+
159.	Criocephalus rusticus	++	197.	Saperda carcharias	++ +
160.	Asemum striatum	+	198.	Saperda populnea	+++
161.	Tetropium castaneum	+	199.	Saperda octopunctata	+
162.	Tetropium fuscum	+	200.	Saperda punctata	+
163.	Stromatrium fulvum	+	201.	Oberea oculata	+
164.	Cerambyx cerdo	++	202.	Oberea linearis	+
165.	Cerambyx scopolii	+	203.	Oberea pedemontana	+
166.	Molorchus minor	++	204.	Pogonochaerus fasciculatus	+
167.	Molorchus umbellatarum	+	205.	Tetrops praeusta	+
168.	Aromia moschata	+	206.	Stenostola ferrea	+
169.	Rosalia alpina	+	Fam. **Chrysomelidae**		

207.	Clytra quadripunctata	+		243.	Cryptorrhynchus lapathi	+++
208.	Melasoma populi	+++		244.	Magdalis frontalis	+
209.	Melasoma tremulae	++		245.	Magdalis armigera	+
210.	Melasoma vigintipunctata	++		246.	Magdalis duplicata	+
211.	Melasoma aenea	+		247.	Magdalis violacea	+
212.	Plagiodera versicolora	+		248.	Pissodes notatus	+++
213.	Phyllodecta vulgatissima	+		249.	Pissodes piniphilus	+
214.	Phyllodecta tibialis	+		250.	Pissodes pini	+
215.	Phyllodecta vitellinae	+		251.	Pissodes piceae	+
216.	Galerucella luteola	++		252.	Pissodes hercyniae	+
217.	Galerucella lineola	+		253.	Pissodes validirostris	++
218.	Agelastica alni	++		254.	Stereonychus fraxini	+++
219.	Altica quercetorum	+++		255.	Curculio glandium	+++
220.	Chalcoides nitidula	+		256.	Curculio nucum	++
	Fam. **Bruchidae**			257.	Curculio elephas	++
221.	Bruchidius fasciatus	+		258.	Furcipus rectirostris	++
	Fam. **Curculionidae**			259.	Bradybates tomentosus	+
222.	Acanthoscelides collusus	+		260.	Lignyodes enucleator	+
223.	Byctiscus betulae	+		261.	Rhynchaenus fagi	++
224.	Byctiscus populi.	+		262.	Rhynchaenus quercus	+
225.	Deporaus betulae	+		263.	Rhynchaenus populi	+
226.	Deporus tristis	+		264.	Rhynchaenus alni	+
227.	Attelabus nitens	+		265.	Rhynchaenus salicis	+
228.	Apoderus coryli	+		266.	Rhynchaenus testaceus	+
229.	Otiorrhunchus ovatus	++			Fam. **Ipidae**	
230.	Otiorrhynchus niger	+		267.	Scolytus multistriatus	+++
231.	Otiorrhynchus scaber	+		268.	Scolytus scolytus	++
232.	Otiorrhynchus singularis	+		269.	Scolytus pygmaeus	+
233.	Phyllobius argentatus	++		270.	Scolytus laevis	+
234.	Phyllobius viridicollis	++		271.	Scolytus intricatus	+++
235.	Phyllobius oblongus	++		272.	Scolytus ratzeburgi	+
236.	Phyllobius arborator	++		273.	Scolytus rugulosus	+
237.	Polydrusus mollis	++		274.	Scolytus mali	+
238.	Polydrusus atomarius	+		275.	Leperisinus varius	+++
239.	Chlorophanus viridis	+		276.	Hylesinus crenatus	+++
240.	Lepyrus palustris	+		277.	Hylesinus oleiperda	+
241.	Hylobius abietis	++		278.	Dendroctonus micans	+
242.	Gasterocerus depressirostris	+		279.	Blastophagus piniperda	+++

280.	Blastophagus minor	+++	318.	Trypodendron domesticum	+
281.	Hylurgus ligniperda	+	319.	Trypodendron signatum	+
282.	Hylurgops palliatus	+	Fam. **Platypodidae**		
283.	Hylastes ater	+	320.	Platypus cylindrus	+++
284.	Hylastes cunicularius	+	Ordo **DIPTERA**		
285.	Polygraphus polygraphus	+	Fam. **Cecidomyiidae**		
286.	Crypturgus pusillus	+	321.	Paradiplosis abietis	+
287.	Cryphalus abietis	+	322.	Oligotrophus juniperinus	+
288.	Cryphalus piceae	+++	323.	Rhabdophaga salicis	+
289.	Cryphalops tiliae	+	324.	Rhabdophaga terminalis	+
290.	Ernoporus fagi	+	325.	Rhabdophaga rosaria	+
291.	Phlaoesinus thujae	++	326.	Helycomia saliciperda	++
292.	Phlaeosinus aubei	++	327.	Mikiola fagi	++
293.	Taphrorychus bicolor	+	328.	Hartigiola fagi	+
294.	Dryocoetus autographus	+	329.	Kaltenbachiola strobi	++
295.	Pityophthorus micrographus	++	330.	Contarinia baeri	+
296.	Pityophthorus balcanicus	+	331.	Contarinia petioli	+
297.	Pityogenes chalcographus	+++	332.	Dryomyia circinnans	+
298.	Pityogenes bidentatus	++	333.	Theclodiplosis brachyntera	+
299.	Pityogenes bistridentatus	++	334.	Didymomyia tiliacea	+
300.	Pityogenes quadridens	++	335.	Dasineura abietiperda	+
301.	Ips sexdentatus	+++	336.	Dasineura piceae	+
302.	Ips acuminatus	++	337.	Dasineura laricis	+
303.	Ips amitinus	++	338.	Dasineura laricis	+
304.	Ips mansfeldi	+	339.	Dasineura fraxini	+
305.	Ips typographus	+++	340.	Plemeliella abietina	+
306.	Orthotomicus erosus	+	341.	Resseliella piceae	+
307.	Orthotomicus suturalis	+	342.	Taxomyia taxi	+
308.	Orthotomicus laricis	+	343.	Semudobia betulae	+
309.	Orthotomicus proximus	+	344.	Semudobia tarda	+
310.	Pityokteines curvidens	+++	345.	Semudobia skuhravae	+
311.	Pityokteines spinidens	++	346.	Monarthopalpus buxi	+
312.	Pityokteines vorontzovi	++	347.	Hartigiola annulipes	+
313.	Xyleborus monographus	+	Fam. **Phoridae**		
314.	Xuleborus dryographus	+	348.	Megaselia rufipes	+
315.	Xyleborus saxeseni	+	Fam. **Lonchaeidae**		
316.	Xylosandrus dispar	+	349.	Earomyia impossibile	+
317.	Trypodendron lineatum	+++	Fam. **Anthomyiidae**		

350.	Lasiomma antracina	+
	Fam. **Agromyzidae**	
351.	Agromyza albitarsis	+
352.	Agromyza alnibetulae	+
353.	Paraphytomyza populicola	+
354.	Phytobia betulae	+
355.	Phytobia cambii	+
356.	Phytobia tremulae	+
	Ordo **LEPIDOPTERA**	
	Fam. **Stigmellidae**	
357.	Stigmella sericopeza	+
	Fam. **Ticheriidae**	
358.	Ticheria complanella	+
	Fam. **Cossidae**	
359.	Cossus cossus	+++
360.	Zeuzera pyrina	+++
	Fam. **Gracillaridae**	
361.	Phyllonorycter populifoliella	+++
362.	Phyllonorycter messaniella	+
363.	Phyllonorycter platani	+++
364.	Phyllonorycter robiniae	+++
365.	Parectopa robiniella	+++
366.	Cameraria ochridella	+++
	Fam. **Phyllocnistidae**	
367.	Phyllocnistes unipunctella	+
	Fam. **Aegeridae**	
368.	Parenthrene tabaniformis	++
369.	Sesia apiformis	+
370.	Synanthedon cephiformis	+
371.	Synanthedon conopiformis	+
372.	Conopia spheciformis	+
373.	Conopia formicaeformis	+
	Fam. **Yponomeutidae**	
374.	Argyresthia fundella	+
375.	Argyresthia laevigatella	+
376.	Argyresthia illuminatella	+
377.	Argyresthia glabratella	+
378.	Argyresthia certella	+

379.	Yponomeuta cagnagellus	+
380.	Yponomeuta padellus	+
381.	Yponomeuta malinella	+
382.	Ocnerostoma piniariella	+
383.	Prays fraxinella	+
	Fam. **Coleophoridae**	
384.	Coleophora laricella	+++
	Fam. **Tortricidae**	
385.	Archips xylosteana	++
386.	Choristoneura hebenstreitella	++
387.	Tortricodes alternella	++
388.	Aleimma loeflingiana	++
389.	Tortrix viridana	+++
390.	Cydia splendana	++
391.	Cydia amplana	+
392.	Cydia strobilella	++
393.	Gravitarmata margarotana	++
394.	Rhyacionia buoliana	+++
395.	Petrova resinella	+
396.	Epiblema tedella	+
397.	Gypsonoma aceriana	+
398.	Zeiraphera diniana	+
399.	Ancylis mitterbacheriana	+
400.	Eudemis profundana	+
401.	Strophedra nitidana	+
	Fam. **Phycitidae**	
402.	Acrobasis tumidella	+
403.	Dioryctria abietella	++
404.	Dioryctria splendidella	++
405.	Etiella zinckenella	+
	Fam. **Pieridae**	
406.	Aporia crataegi	+
	Fam. **Nymphalidae**	
407.	Vanessa polychloros	+
408.	Vanessa anthiopa	+
	Fam. **Lasiocampidae**	
409.	Malacosoma neustria	+++
410.	Eriogaster lanestris	+

411.	Lasiocampa quercus	+
412.	Gastropacha quercifolia	+
413.	Dendrolimus pini	++
Fam. **Saturnidae**		+
414.	Saturnia pyri	+
415.	Saturnia pavonia	+
416.	Aglia tau	+
Fam. **Geometridae**		
417.	Operophtera brumata	+++
418.	Operophtera fagata	++
419.	Colotois pennaria	+
420.	Agriopis leucophaearia	++
421.	Agriopis marginaria	+
422.	Erranis defoliaria	+++
423.	Bupalus piniarius	+
424.	Eupithecia abietaria	+
Fam. **Sphingidae**		
425.	Hyloicus pinastri	+
426.	Acherontia atropos	+
427.	Sphinx ligustri	+
428.	Mimas tiliae	+
429.	Laothoe populi	+
Fam. **Notodontidae**		
430.	Clostera pigra	+++
431.	Phalera bucephala	+
432.	Cerura vinula	+
Fam**. Thaumatopoeidae**		
433.	Thaumatopoea pityocampa	+++
434.	Thaumatopoea processionea	++
Fam. **Lymantridae**		
435.	Euproctis chrysorrhoea	+++
436.	Leucoma salicis	+++
437.	Lymantria monacha	+ +
438.	Lymantria dispar	+++
439.	Orgyia antiqua	+
440.	Orgyia recens	++
441.	Dasychira pudibunda	+
Fam. **Arctiidae**		

442.	Hyphantria cunea	+++
443.	Arctia caja	+
444.	Euplagia quadripunctaria	+
445.	Callimorpha dominula	+
Fam. **Noctuidae**		
446.	Euxoa temera	++
447.	Panolis flammea	+
448.	Orthosia cruda	+
449.	Brachionych sphinx	+
450.	Eupsilia transversa	+
451.	Amphipyra pyramidea	+
452.	Cosmia trapesina	+
453.	Nycteola asiatica	++
454.	Bena prasinana	+
Ordo HYMENOPTERA		
Fam. **Xyelidae**		
455.	Xylea julii	+
Fam. **Pamphiliidae**		
456.	Acantholyda posticalis	+
457.	Acantholyda erytrocephala	++
458.	Acantholyda hieroglyphica	++
459.	Acantholyda serbica	++
460.	Cephalcia abietina	+
Fam. **Argidae**		
461.	Arge berberidis	+
462.	Arge ochropus	+
463.	Arge pagana	+
464.	Arge pullata	+
Fam. **Cimbicidae**		
465.	Cimbex femorata	+
466.	Cimbex luteus	+
467.	Cimbex fagi	+
Fam. **Diprionidae**		
468.	Microdiprion pallipes	+
469.	Neodiprion sertifer	+++
470.	Diprion pini	+++
471.	Diprion similis	+
Fam. **Tenthredinidae**		

472.	Caliroa cerasi	+
473.	Caliroa annulipes	+
474.	Caliroa varipes	+
475.	Macrophya punctum-album	+
476.	Hoplocampa testudinea	+
477.	Hoplocampa minuta	+
478.	Hoplocampa flava	+
479.	Hoplocampa brevis	+
480.	Hoplocampa rutilicornis	+
481.	Hoplocampe crataegi	+
482.	Hoplocampa alpina	+
483.	Eriocampa ovata	+
484.	Trichocampus viminalis	+
485.	Trichocampus ulmi	+
486.	Pristiphora abietina	++
487.	Pristiphora laricis	+
488.	Pontania viminalis	+
489.	Pontania vesicolor	+
490.	Croecus septentrionalis	+
491.	Pachynematus scutellaris	+
492.	Pachynematus montanuis	+
Fam. **Xiphydriidae**		
493.	Xiphydria camelus	+
494.	Xiphydria prolongata	+
495.	Xiphydria longicornis	+
Fam. **Siricidae**		
496.	Urocerus gigas	++
497.	Urocerus phantoma	+
498.	Urocerus augur	+
499.	Sirex juvencus	++
500.	Sirex noctilio	+
501.	Xeris spectrum	+
502.	Tremex fuscicornis	+

503.	Tremex magus	+
Fam. **Cynipidae**		
504.	Cynips quercusfolii	+
505.	Neuroterus quercusbaccarum	+
506.	Biorrhiza pallida	+
507.	Andricus quercuscalicis	++
508.	Andricus collari	+
509.	Andricus hungaricus	+
510.	Andricus quercustozae	+
511.	Diplolepis rosae	+
512.	Pediaspis aceris	+
Fam. **Torymidae**		
513.	Megastigmus aculeatus	+
514.	Megastigmus brevicaudatus	+
515.	Megastigmus pistaciae	+
516.	Megastigmus amicorum	+
517.	Megastigmus bipunctatus	+
518.	Megastigmus wachtli	+
519.	Megastigmus spermotrophus	+++
520.	Megastigmus suspectus	+
521.	Syntomaspis druparum.	+
522.	Syntomaspis varians	+
523.	Syntomaspis seminus	+
Fam. **Formicidae**		
524.	Camponotus herculeanus	++
Fam. **Vespidae**		
525.	Vespa crabro	+

+ - without economic significance
++ - economic significant insect
+++ - caused large economic damages