

## **Forestry Statistics 2008**

This series consists mainly of primary statistics, statistics from statistical accounting systems and results of special censuses and surveys, for reference and documentation purposes. Presentation is basically in the form of tables, figures and necessary information about data, collection and processing methods, and concepts and definitions. In addition, a short overview of the main results is given. The series also includes Statistical Yearbook of Norway

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When using material from this publication, Statistics Norway shall be quoted as the source.	Category not applicable	.
	Data not available	..
	Data not yet available	...
	Not for publication	:
	Nil	-
ISBN 978-82-537-7705-4 Trykt versjon	Less than 0.5 of unit employed	0
ISBN 978-82-537-7706-1 Electronic version	Less than 0.05 of unit employed	0.0
ISSN 1890-7091 Printed version	Provisional or preliminary figure	*
ISSN 1890-7105 Electronic version	Break in the homogeneity of a vertical series	—
Subject: 10.04	Break in the homogeneity of a horizontal series	
Print: Statistics Norway	Decimal punctuation mark	.

## Preface

NOS Forestry Statistics is issued annually and contains a comprehensive survey on forestry statistics collected by Statistics Norway. Forestry Statistics 2008 contains statistics on forest resources, forest properties, silviculture, forest roads, production, forest owners, economy etc.

The main forestry statistics are available on the Internet: <http://www.ssb.no/skog>.

In addition to tables in this publication it is also possible to obtain other or more detailed tables by applying directly to Statistics Norway. These tables can be transmitted electronically or by paper.

This publication has been prepared by Hanne Haanæs. Ole Osvald Moss, Head of Division for Primary Industry Statistics, is responsible for the publication.

Statistics Norway  
Oslo/Kongsvinger, 11 November 2009

Øystein Olsen

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## 1. Introduction

The purpose of this publication is, as far as possible, to present statistics on Norwegian forestry. The publication comprises the following main subjects:

- The National Forest Inventory
- Silviculture
- Forest roads
- Commercial roundwood removals
- Forest properties and forest owners
- Sample Survey of Forestry, 2008

## 2. The National Forest Inventory

### 2.1. Introduction and history

The National Forest Inventory is a sample plot inventory aimed at providing data on natural resources and the environment for forest land in Norway. The Inventory is conducted by the Norwegian Forest and Landscape Institute. Inventory work was started in 1919, with the different inventory cycles taking place in the following years:

- 1: 1919-1930
- 2: 1937-1956
- 3: 1957-1964
- 4: 1964-1976
- 5: 1980-1986
- 6: 1986-1993
- 7: 1994-1998
- 8: 2000-2004
- 9: 2005-2009

The entire country (except Finnmark county) was surveyed during the most recent period. Each inventory cycle covers the most important forest districts, while inventories in western and northern Norway have been carried out less frequently and are sometimes incomplete.

### 2.2. Users and applications

The most central users of the results from the National Forest Inventory are public administration at national and county level. The results serve as important input for the formation of forestry policies and control the effects of it.

In recent years, the demand for national forestry statistics has increased, and the National Forest Inventory is a central data source. Data from the inventories are used for example in research to develop descriptive models of forest dynamics.

The forest industry is an important user of the data. Among others thing, they need the data for strategic planning in the sawmill and pulp industry. The data are also used by educational institutions and by professionals in agriculture, forestry and environmental protection.

### 2.3. Population and publishing

The statistics include all counties except Finnmark, however Finnmark will also be surveyed during the present five-year cycle.

The figures are published annually.

## 2.4. Data sources and collection of data

The only data source is the National Forest Inventory's database. One of the main tasks of the National Forest Inventory is the assessment of timber resources. Data are collected so that the volume can be computed for different tree species, diameters and quality classes. Numbers of trees and annual increments are also calculated.

The National Forest Inventory's data collection is based on data from permanent sample plots. For the entire country except Finnmark, a systematic sample plot inventory in a bond by 3 x 3 kilometres is established. In the present inventory cycle, sample plots for Finnmark are also established. The plots are visited every five years and the survey forms the basis for statistics for the whole of Norway. In order to publish data by county, temporary plots are established in the counties when each county is appraised. Each county is appraised every fifteen years. An extensive number of attributes concerning forest conditions are recorded on the plots, some of which describe the area. Parameters that characterise level of development and species composition of the vegetation, certain aspects of biodiversity, utilisation and yield capacity of the land, forest treatment, conditions surrounding forest operations, etc., are measured or estimated. Inside a 250 square metre circle, every tree with a diameter of more than five centimetres in breast height (1.3 metres above ground level) is callipered.

## 2.5. Sampling

The sampling design has changed considerably over the years. The first two cycles were carried out as strip sampling inventories. A system of parallel strips was established throughout the area of interest, and measurements were taken within these strips. In the middle of the 1950s, the strip sampling was replaced by a systematic sample plot inventory, a method which has also been used subsequently. However, minor alterations concerning sampling design have been made several times.

An important difference between the period 1986-1993 and the previous inventory cycles was the introduction of permanent sample plots. A sub-sample of the established plots was marked in order to be able to re-measure the exact same area in future inventories. This was to provide greater possibilities for detecting changes in forest conditions. The permanent plots were re-measured during the period 1994-1998, according to a specific pattern. The inventory of one single year will provide representative results for the whole country.

Highly conspicuous markings are avoided in order to prevent the location of the plots from being too obvious to passers-by. The permanent plots should represent a random sample of the forests in Norway, and should not be treated any different than the rest of the forests. A total of approximately 16 000 permanent sample plots have been established, of which about 10 500 are located on productive forest and other wooded land below the coniferous forest limit. On average, the sampled area comprises about  $3 \times 10^{-5}$  of the surveyable area.

## 2.6. Control and revision

Before each field season, training is held for the field crew. During the field season, the office staff visit the field workers at least once and some controls are carried out. In most cases, a control of the assessment is done. About 5 per cent of the sample plots are surveyed once more.

Corrections of the field instructions are made before every field season. A main revision is carried out every five years.



## 2.7. Estimation

In order to estimate figures, for instance for a county, the area factor must be known. In a 3 x 3 kilometre net the area factor will be close to nine square kilometres or 900 hectares. Each sample plot will represent 900 hectares. For each tree measured, a volume with and without bark and the increment are estimated. Multiplying this with the area factor will establish how much each tree represents in this area. The volume for the growing stock in a county for instance can be found by summarising the volume of each measured tree in the county multiplied with the area factor.

## 2.8. Concepts, variables and classifications

### Definitions of the main concepts and variables

*Growing stock*: total volume of the standing forest under bark. Comprises trees with a diameter of at least five centimetres at breast height (1.3 metres above ground level).

*Annual increment*: annual volume increment in standing forest inside bark.

### Standard classifications

*Development class*: Describes the forest's development class from not regenerated forest to old forest.

In the current system the following definitions are used:

Development class I: forest under regeneration (non-stocked land and very sparsely stocked stands)

Development class II: regenerated areas and young forest

Development class III: young thinning stands

Development class IV: advanced thinning stands

Development class V: mature forest

*Site quality class*: an expression of the area's capacity to produce wood when stocked with a tree species suitable for the local growing conditions. The site quality of the H<sub>40</sub>-system is based upon the top height (the middle height of the hundred trees per hectare with the largest diameter) of the trees at the age of 40 years at breast height (1.3 metre above ground level).

## 2.9. Sources of error and uncertainty

### Measurement and processing errors

Systematic errors are caused by errors or uncertainties in measurement, estimation and recording in the field, which are one-sided. Efforts are being made to reduce these errors as far as possible by training the field crews and checking their measurements. An example of errors of this type is the possibility of apparent area changes for productive forest land, which are really caused by different methods of judging the coniferous forest limit. The magnitude of systematic errors cannot normally be calculated.

### Sampling errors

Random errors of the results are caused by the limited sample of the forest area and wood resources measured by the inventory, in addition to random errors of measurement. A measure for the random error is the so-called standard error, which is possible to calculate. The root mean square error (RMS error) depends on the number of sample plots and the variance of the parameter of interest, for instance volume of growing stock. If the observations are divided into more groups, the magnitude of the RMS error will be higher within each group.

## 2.10. Comparability and coherence

The National Forest Inventory carried out the first assessment at county level in 1919.

Statistics Norway estimated the productive forest area from The Sample Survey of Agriculture and Forestry and The Census of Agriculture and Forestry 1979 and 1989.

## 2.11. Main results

The volume of growing stock continues to increase. According to calculations from the National Forest Inventory, the volume has increased by 19 million cubic metres from 2007. The total growing stock in Norwegian forests is now 784 million cubic metres.

Out of the total growing stock, 725 million cubic metres stand on the productive forest area. The annual increment in productive forest amounted to 23.6 million cubic metres in 2008, while the annual increment in total was almost 25 million cubic metres. The increment decreased slightly for the third year in a row.

Spruce is the most common species of tree with 45 per cent of growing stock, followed by pine with 32 per cent and broad-leaved with 23 per cent. During the last 40 years, the spruce stock has increased by 56 per cent, pine by 90 per cent and the broad-leaved by 136 per cent. In total, the growing stock is 80 per cent higher than 40 years ago.

Spruce was most common in the counties of Sør-Trøndelag and Nord-Trøndelag and represented 63 per cent of the volume of growing stock in these counties. In the well forested counties in the eastern part of Norway, spruce also amounted to more than half of the volume. In the northern part of Norway, broad-leaved was most common with 62 per cent of the volume of growing stock. In the western parts of the country, the growing stock was the same level as for spruce, pine and broad-leaved. Fifteen years ago, spruce corresponded to a quarter of the total volume.

Habitats for vulnerable and endangered species in forest are registered in the same way as for ordinary forest management planning. For the country as a whole, dead wood lying is the most common of these habitats and was found on 12.7 per cent of the productive forest area. The forest region with the counties of Hedmark, Østfold, Oslo and Akershus had the lowest occurrence of dead wood lying with 6.2 per cent. On the other hand, the counties of Telemark, Aust-Agder and Vest-Agder had the highest occurrence with 18.5 per cent.

The productive forest area below the coniferous forest line, excluding Finnmark county, is estimated to be 74 148 square kilometres. In addition, 17 100 square kilometres is considered as unproductive forest area. The total area of wooded land is approximately 120 000 square kilometres.

## 2.12. Availability

[http://www.ssb.no/english/subjects/10/04/20/1st\\_en/](http://www.ssb.no/english/subjects/10/04/20/1st_en/)

*More tables in StatBank*

[06286: Productive forest area, by development class \(1957-1964 - 2004-2008\)](#)

[06287: Productive forest area, by development class, site quality and surveyed regions \(1996-2000 - 2004-2008\)](#)

[06288: Productive forest area, except area under regeneration, by species of tree and surveyed regions \(km<sup>2</sup>\) \(1996-2000 - 2004-2008\)](#)

[06289: Growing stock inside bark and annual increment inside bark \(1 000 m<sup>3</sup>\) \(1933 - 2008\)](#)

[06290: Growing stock under bark, by type of land, species of tree and surveyed regions \(1 000 m<sup>3</sup>\) \(1996-2000 - 2004-2008\)](#)

[06292: Total area, by type of vegetation and surveyed regions \(km<sup>2</sup>\) \(1996-2000 - 2000-2004\)](#)

[06291: Annual increment under bark, by type of land, species of tree and surveyed regions \(1 000 m<sup>3</sup>\), \(1996-2000 - 2004-2008\)](#)

[06984: Registered incidence of different habitats in productive forest \(per cent\) \(2003-2007 - 2004-2008\)](#)

*Storage of microdata*

Microdata are stored by The National Forest Inventory.

**2.1. Growing stock inside bark and annual increment inside bark. The whole country. 1933-2008. 1 000 m<sup>3</sup>**

Year of inventory	Growing stock				Annual increment			
	Total	Spruce	Pine	Broad-leaved	Total	Spruce	Pine	Broad-leaved
1933	322 635	170 960	90 002	61 673	10 447	5 835	2 535	2 077
1967	435 121	226 168	133 972	74 981	13 200	7 131	3 364	2 706
1986	543 234	261 359	177 771	104 104	18 579	9 951	4 838	3 790
1987	552 414	263 992	180 634	107 788	18 958	10 103	4 935	3 920
1988	561 004	266 383	183 014	111 607	19 321	10 249	5 018	4 054
1989	569 664	268 497	185 642	115 525	19 688	10 388	5 109	4 191
1990	578 317	270 543	188 279	119 495	20 058	10 528	5 200	4 330
1991	588 476	273 333	191 540	123 603	20 485	10 703	5 310	4 473
1992	599 243	276 788	194 806	127 649	20 921	10 892	5 411	4 618
1993	609 399	279 968	197 904	131 526	21 337	11 070	5 498	4 769
1994-1998	651 688	292 018	218 305	141 364	21 945	11 219	5 855	4 871
1999	685 682	304 081	229 874	151 727	23 076	11 684	6 163	5 229
2000	697 998	308 614	233 949	155 436	23 488	11 858	6 273	5 357
2000-2004	720 789	323 213	238 137	159 439	25 540	13 709	6 151	5 680
2001-2005	735 610	331 236	241 730	162 644	25 674	13 868	6 092	5 714
2002-2006	747 945	336 201	244 622	167 122	25 526	13 746	6 010	5 769
2003-2007	764 952	343 720	249 201	172 031	25 262	13 644	5 944	5 674
2004-2008	783 982	352 558	254 554	176 870	24 897	13 482	5 857	5 559

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory and Statistics Norway, resource account for forestry.

**2.2. Total area, by type of vegetation and surveyed regions. km<sup>2</sup>**

Region	Year of inventory	Total	Below the coniferous forest line					Other area <sup>1</sup>	Above the coniferous line <sup>1</sup>
			Total	Productive forest land	Un-productive forest	Broad-leaved, spruce and pine bogs	Sedge and peat bogs		
<b>Surveyed regions, total</b>	<b>2000-2004</b>	<b>275 122</b>	<b>150 969</b>	<b>74 148</b>	<b>17 099</b>	<b>6 032</b>	<b>7 652</b>	<b>46 037</b>	<b>124 153</b>
Østfold, Akershus, Oslo and Hedmark	2000-2004	36 942	30 075	18 955	1 310	1 518	817	7 474	6 867
Oppland, Buskerud and Vestfold	2000-2004	42 334	24 004	14 413	2 078	737	891	5 885	18 330
Telemark, Aust-Agder and Vest-Agder	2000-2004	31 808	21 112	11 181	3 349	456	778	5 347	10 696
Rogaland, Hordaland, Sogn og Fjordane and Møre og Romsdal	2000-2004	58 499	25 456	9 358	2 674	590	1 041	11 793	33 043
Sør-Trøndelag and Nord-Trøndelag	2000-2004	41 228	24 292	10 150	3 222	2 004	2 344	6 572	16 936
Nordland and Troms Romsa	2000-2004	64 311	26 030	10 091	4 465	726	1 782	8 966	38 281
Finnmark Finnmarku	2000-2004	..	..	..	..	..	..	..	..

<sup>1</sup>Including freshwater.

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2000-2004.

**2.3. Productive forest area<sup>1</sup>, by development class. 1 000 hectares and per cent**

Year of inventory	Total	Development class				
		I	II	III	IV	V
1 000 hectares						
1951-1964 .....	3 038	355	401	413	1 210	659
1964-1976 .....	3 101	218	809	405	950	719
1982-1984 .....	3 240	253	838	584	760	805
1986-1992 .....	3 286	171	766	678	707	964
1994-1998 .....	3 330	139	800	726	657	1 008
1998-2002 .....	3 370	124	815	728	667	1 036
1999-2003 .....	3 365	120	807	722	672	1 045
2001-2005 .....	3 362	94	803	727	685	1 053
2002-2006 .....	3 368	94	802	742	673	1 056
2003-2007 .....	3 378	93	793	741	679	1 072
2004-2008 .....	3 391	91	789	748	679	1 084
Per cent						
1951-1964 .....	100	12	13	14	40	22
1964-1976 .....	100	7	26	13	31	23
1982-1984 .....	100	8	26	18	23	25
1986-1992 .....	100	5	23	21	22	29
1994-1998 .....	100	4	24	22	20	30
1998-2002 .....	100	4	24	21	20	31
1999-2003 .....	100	4	24	21	20	31
2001-2005 .....	100	3	24	22	20	31
2002-2006 .....	100	3	24	22	20	31
2003-2007 .....	100	3	23	22	20	32
2004-2008 .....	100	3	23	22	20	32

<sup>1</sup> Refer to the counties Østfold, Akershus, Oslo, Hedmark, Oppland, Buskerud and Vestfold. These are the only counties that are included in all the inventory cycles presented.

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2004-2008.

**2.4. Growing stock under bark, by type of land, species of tree and surveyed regions. 1 000 m<sup>3</sup>**

Region	Year of inventory	Total	Productive forest land				Other types of land. Included Productive forest land in protected areas			
			Total	Spruce	Pine	Broadleaved	Total	Spruce	Pine	Broadleaved
<b>Surveyed regions, total</b> .....	<b>2004-2008</b>	<b>783 982</b>	<b>725 193</b>	<b>338 633</b>	<b>224 691</b>	<b>161 869</b>	<b>58 789</b>	<b>13 925</b>	<b>29 863</b>	<b>15 001</b>
Østfold, Akershus, Oslo and Hedmark .....	2004-2008	215 643	206 494	106 680	74 520	25 294	9 149	2 433	5 242	1 475
Oppland, Buskerud and Vestfold .....	2004-2008	165 753	155 470	87 903	42 410	25 158	10 283	4 882	2 864	2 537
Telemark, Aust-Agder and Vest-Agder .....	2004-2008	141 599	127 323	44 170	53 647	29 506	14 276	2 828	8 789	2 660
Rogaland, Hordaland, Sogn og Fjordane and Møre og Romsdal .....	2004-2008	109 745	101 097	32 113	34 824	34 160	8 648	434	4 944	3 270
Sør-Trøndelag and Nord-Trøndelag .....	2004-2008	94 004	83 314	52 820	14 545	15 948	10 690	2 875	6 062	1 753
Nordland and Troms Romsa .....	2004-2008	57 237	51 494	14 947	4 745	31 802	5 743	474	1 963	3 306
Finmark Finnmarkku .....	2004-2008	..	..	..	..	..	..	..	..	..

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2004-2008.

**2.5. Annual increment under bark, by type of land, species of tree and surveyed regions. 1 000 m<sup>3</sup>**

Region	Year of inventory	Total	Productive forest land				Other types of land. Included Productive forest land in protected areas			
			Total	Spruce	Pine	Broadleaved	Total	Spruce	Pine	Broadleaved
<b>Surveyed regions, total</b> .....	<b>2004-2008</b>	<b>24 897</b>	<b>23 653</b>	<b>13 212</b>	<b>5 308</b>	<b>5 133</b>	<b>1 244</b>	<b>270</b>	<b>549</b>	<b>426</b>
Østfold, Akershus, Oslo and Hedmark .....	2004-2008	7 582	7 379	4 387	2 030	962	203	50	107	46
Oppland, Buskerud and Vestfold .....	2004-2008	5 086	4 880	3 061	911	907	206	94	42	69
Telemark, Aust-Agder and Vest-Agder .....	2004-2008	4 209	3 926	1 814	1 220	892	283	59	156	67
Rogaland, Hordaland, Sogn og Fjordane and Møre og Romsdal .....	2004-2008	3 691	3 471	1 717	732	1 023	220	11	100	110
Sør-Trøndelag and Nord-Trøndelag .....	2004-2008	2 644	2 451	1 588	298	566	193	46	106	41
Nordland and Troms Romsa .....	2004-2008	1 685	1 546	645	117	784	139	9	37	93
Finmark Finnmarkku .....	2004-2008	..	..	..	..	..	..	..	..	..

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2004-2008.

**2.6. Registered incidence of different habitats<sup>1</sup> in productive forest, by region. Hectares and per cent**

Region	Year of inventory	Productive forest area in total	Standing dead trees	Dead wood lying	Trees with nutrient-rich bark	Trees with pendant lichens	Late successions of deciduous	Old trees	Rich ground vegetation
Hectares									
<b>Surveyed regions, total</b> .....	<b>2004-2008</b>	<b>7 414 800</b>	<b>215 761</b>	<b>988 584</b>	<b>19 516</b>	<b>200 355</b>	<b>135 736</b>	<b>129 947</b>	<b>213 117</b>
Østfold, Akershus, Oslo and Hedmark .....	2004-2008	1 895 500	20 066	121 575	0	41 600	18 736	28 044	19 753
Oppland, Buskerud and Vestfold .....	2004-2008	1 441 300	29 705	185 133	4 035	63 646	21 757	45 866	70 385
Telemark, Aust-Agder and Vest-Agder .....	2004-2008	1 118 100	60 496	217 228	7 820	5 970	62 830	24 856	38 034
Rogaland, Hordaland, Sogn og Fjordane and Møre og Romsdal .....	2004-2008	935 800	40 111	138 133	2 503	14 894	11 749	7 565	34 362
Sør-Trøndelag and Nord-Trøndelag .....	2004-2008	1 015 000	36 115	169 441	2 114	53 211	14 047	20 107	18 407
Nordland and Troms Romsa .....	2004-2008	1 009 100	29 268	157 074	3 044	21 034	6 617	3 509	32 176
Finmark Finnmarku .....	2004-2008	..	..	..	..	..	..	..	..
Per cent									
<b>Surveyed regions, total</b> .....	<b>2004-2008</b>	<b>100.0</b>	<b>2.8</b>	<b>12.7</b>	<b>0.3</b>	<b>2.6</b>	<b>1.7</b>	<b>1.7</b>	<b>2.7</b>
Østfold, Akershus, Oslo and Hedmark .....	2004-2008	100.0	1.0	6.2	0.0	2.1	1.0	1.4	1.0
Oppland, Buskerud and Vestfold .....	2004-2008	100.0	2.0	12.2	0.3	4.2	1.4	3.0	4.6
Telemark, Aust-Agder and Vest-Agder .....	2004-2008	100.0	5.1	18.5	0.7	0.5	5.3	2.1	3.2
Rogaland, Hordaland, Sogn og Fjordane and Møre og Romsdal .....	2004-2008	100.0	4.0	13.9	0.3	1.5	1.2	0.8	3.5
Sør-Trøndelag and Nord-Trøndelag .....	2004-2008	100.0	3.4	15.9	0.2	5.0	1.3	1.9	1.7
Nordland and Troms Romsa .....	2004-2008	100.0	2.8	14.8	0.3	2.0	0.6	0.3	3.0
Finmark Finnmarku .....	2004-2008	..	..	..	..	..	..	..	..

<sup>1</sup> Corresponds to the registration of habitats for vulnerable and endangered species (red listed species) in a forest resource assessment. Two or more habitats may be registered within the same area.

Source: The Norwegian Forest and Landscape Institute. The National Forest Inventory, 2004-2008.

## 3. Silviculture

### 3.1. Introduction and history

The purpose of the statistics is to provide information at county level on silviculture and forest drainage.

The structure of the forest administration prescribed in the Forestry Act of 1932 provided a platform for collecting statistical data on silviculture work etc. approved by the Forest Service and was thereby entitled to receive subsidies. Silviculture statistics begin with the fiscal year 1935/36. Prior to that, the Ministry of Agriculture compiled statistics on silviculture, ditch cleaning and fertilizing of forests. The completed figures have been published by Statistics Norway. Statistics on new ditches for forest drainage have previously been compiled entirely by Statistics Norway on the basis of data from the Ministry of Agriculture and Food. Statistics Norway has compiled all silviculture statistics since 1997.

### 3.2. Users and applications

The statistics are used by public agencies (Ministries, county authorities), forest owners' organisations and research institutes. Results from the silviculture statistics are included in the Aggregate Account for Forestry, which is compiled by Statistics Norway.

### 3.3. Population and publishing

The statistics only cover activities financed wholly or partly by the Forest Trust Fund and/or by government subsidies.

The Forest Trust Fund is a legalised fund where the forest owners set apart a certain amount of the gross value of their roundwood sold. Money from the fund can be used by the owner for forest investments, such as planting, clearing, drainage etc.

The figures are published annually.

### 3.4. Data sources and collection of data

The silviculture statistics are based on information from the Norwegian Agricultural Authority (SLF) and their database on the Forest Trust Fund (SKAS).

The Forest Service in each municipality keeps the Forest Trust Fund Account. The account is reported to the County Department of Agricultural Affairs (FMLA). The Norwegian Agricultural Authority obtains data from the databases and organises them in files forwarded to Statistics Norway.

### 3.5. Control and revision

If the data are unclear, the Norwegian Agricultural Authority or County Department of Agricultural Affairs is contacted so that any errors can be corrected.

### 3.6. Estimation

The statistics are published at county level.

### 3.7. Concepts, variables and classifications

*Definitions of the main concepts and variables*

*Number of plants planted:* total number of plants planted. Cover both forest regeneration and supplementary planting.

*Planting cost, total*: total cost of plants and planting. Covers both forest regeneration and supplementary planting.

*Tending of young stands*: tending of young forest stands until first thinning.

*Scarification*: spot removal of vegetation in order to improve the conditions for natural regeneration and the growth of forest plants.

*Forest area planted or seeded*: forest area planted or seeded for forest production. Does not include supplementary planting.

*Productive forest area*: forest area that under favourable stand conditions has an annual yield capacity per hectare of at least 1 cubic metre of wood including bark.

### 3.8. Sources of error and uncertainty

*Measurement and processing errors*

In some cases, the reported areas in the Forest Accounts are estimated. Adaptations to the subsidies system can also occur.

### 3.9. Comparability and coherence

*Comparability over time and space*

During the period 1935/36 - 1949/50, the statistics apply to the fiscal year. In 1951, the calendar year was adopted, but the data for this year were combined with the data for the second half of 1950. The transition data from fiscal year to calendar year consequently cover 1½ years. The 1998 figures for Finnmark and 1999 figures for Troms are missing.

*Coherence with other statistics*

Results from the Silviculture statistics may be compared with some of the results from the Sample Survey of Agriculture and Forestry. The Sample Survey of Agriculture and Forestry are available via the following link:  
[http://www.ssb.no/english/subjects/10/04/20/skogbruk\\_en/](http://www.ssb.no/english/subjects/10/04/20/skogbruk_en/)

### 3.10. Main results

Not since 2002 has more forest been planted. In 2008, a total of 14 100 hectares were planted; an increase of 8 per cent from the year before.

From the 1980s to the beginning of the 1990s, around 30 000 hectares were planted yearly. In 1994, the planted area was reduced to approximately 20 000 hectares, and in 2005 to around 10 000 hectares. Since 2005, the planted area has increased, and in 2008 the area totalled 14 100 hectares.

Scarification involves removal of vegetation in spots to improve conditions for natural regeneration and growth of forest plants. A total of 4 800 hectares were scarified in 2008; a decrease of 950 hectares from 2007.

Tending of young stands consists of clearing, weed combating and juvenile spacing – all work that is done in connection with the establishment of new forest. In total, 30 000 hectares of young forest were tended in 2008, almost the same area as in 2007.

In total, 660 hectares were sprayed in 2008, which is 40 hectares more than in the year before.

There has been a sharp decline in drainage of bogs and woodland in recent years. This is mainly due to greater environmental awareness and reduced profitability. The reduction in drainage works in 2007 coincides with the disappearance of public subsidies to these activities in 2007. In 2008, drainage work was not registered.

In total, NOK 241 million was invested in silviculture in 2008. Of this, NOK 108 was invested in forest planting, NOK 100 million in tending and NOK 10 million in scarification. The remainder was invested in clearing and fertilizing and such like.

### 3.11. Availability

[http://www.ssb.no/english/subjects/10/04/20/skogkultur\\_en/](http://www.ssb.no/english/subjects/10/04/20/skogkultur_en/)

*More tables in StatBank* [05543: Fertilizing of forest \(C\) \(1997 - 2008\)](#)  
[05542: Chemical cleaning and weed combating \(C\) \(1995 - 2008\)](#)  
[06108: Expenditure and public subsidies on silviculture \(NOK 1 000\). \(C\) \(2005 - 2008\)](#)  
[03679: Scarification. Area and expenditure \(C\) \(1997 - 2008\)](#)  
[03677: Forest drainage. Area drained and length of ditches \(C\) \(1997 - 2008\)](#)  
[05578: Forest drainage, by expenditure and subsidies \(NOK 1 000\). \(C\) \(1995 - 2008\)](#)  
[03522: Forest planting \(C\) \(1982 - 2008\)](#)  
[05544: Young forest tending \(C\) \(1995 - 2008\)](#)  
[03523: Clearing and weed combating \(C\). The Table is closed \(1982 - 2003\)](#)

*Storage of microdata* Microdata are stored in Statistics Norway.



3.1. Forest regeneration<sup>1</sup>, by county

Year	County	Planting		
		Area	Number of plants <sup>2</sup>	Expenditure <sup>2</sup>
		Decares	1 000 pieces	NOK 1 000
1991	.....	290 863	62 075	174 586
1992	.....	281 107	57 874	161 989
1993	.....	226 831	47 174	140 077
1994	.....	203 562	44 653	131 578
1995	.....	227 437	46 839	145 771
1996	.....	218 109	45 530	145 129
1997	.....	205 074	39 970	135 891
1998 <sup>3</sup>	.....	205 019	42 561	151 219
1999	.....	190 369	37 940	142 704
2000	.....	187 796	37 392	145 016
2001	.....	182 521	34 966	139 905
2002	.....	158 232	29 031	120 006
2003	.....	109 332	18 759	77 512
2004	.....	114 535	18 417	77 169
2005	.....	103 468	16 818	72 909
2006	.....	119 390	19 192	84 599
2007	.....	129 954	20 687	92 422
2008	.....	140 575	23 028	107 934

## 2008

County	Area	Number of plants	Expenditure
	Decares	1 000 pieces	NOK 1 000
Østfold	4 558	882	4 221
Akershus and Oslo	5 627	1 064	5 080
Hedmark	29 350	5 245	21 700
Oppland	25 379	3 784	16 893
Buskerud	11 590	1 880	8 990
Vestfold	5 909	854	4 644
Telemark	9 180	1 276	7 233
Aust-Agder	2 631	421	2 173
Vest-Agder	2 234	388	2 177
Rogaland	882	208	1 256
Hordaland	974	203	991
Sogn og Fjordane	918	234	1 109
Møre og Romsdal	2 103	456	2 236
Sør-Trøndelag	11 828	1 776	8 413
Nord-Trøndelag	20 925	3 221	14 879
Nordland	4 858	733	3 743
Troms Romsa	1 629	406	2 196
Finnmark Finnmarku	-	-	-

<sup>1</sup>The figures only comprise work financed with forest trust fund or government subsidies. <sup>2</sup>Includes supplementary planting. <sup>3</sup>Figures for Finnmark are missing.  
Source: Silviculture, Statistics Norway.

3.2. Forest drainage<sup>1,2</sup>, 1991-2008

Year	Ditches	Area drained					Expenditure	Of wich government subsidies
		Total	Woodland	Nutritious gradual flow bogs	Other gradual flow bogs	Ombrogenous bogs		
		km	Decare	Decare	Decare	Decare	NOK 1 000	NOK 1 000
1991	1 716	29 920	25 177	2 704	1 853	186	12 147	4 596
1992	1 233	22 441	18 513	2 550	1 334	44	9 313	3 608
1993	908	16 969	13 776	2 030	1 061	102	6 664	2 389
1994	683	12 969	11 706	350	884	29	5 046	1 642
1995	413	7 978	7 370	323	285	-	3 281	936
1996	339	7 774	7 139	328	307	-	2 556	649
1997	269	4 464	4 069	115	256	24	2 056	543
1998 <sup>3</sup>	320	7 044	6 347	314	297	86	2 419	775
1999	312	5 666	5 116	150	386	14	2 497	687
2000	213	3 856	3 551	17	288	-	1 724	503
2001	176	4 149	4 055	21	73	-	1 491	394
2002	160	3 903	3 770	-	133	-	1 424	343
2003	36	943	901	30	12	-	343	-
2004	55	2 861	2 804	29	28	-	554	125
2005	64	1 627	1 575	4	48	-	607	203
2006	77	2 197	2 176	20	1	-	711	251
2007	3	51	45	6	-	-	20	14
2008	-	-	-	-	-	-	-	-

<sup>1</sup>The figures only comprise work financed with forest trust fund or government subsidies. <sup>2</sup>New ditches. <sup>3</sup>Figures for Finnmark are missing.  
Source: Silviculture, Statistics Norway.

**3.3. Silviculture<sup>1</sup>, by county**

Year	County	Area	Expenditure
		Decares	NOK 1 000
2002	.....	308 973	77 219
2003	.....	112 259	28 679
2004	.....	259 699	68 879
2005	.....	282 535	78 652
2006	.....	217 653	63 938
2007	.....	299 824	94 166
2008	.....	298 703	99 734
<b>2008</b>			
<b>County</b>			
Østfold	.....	23 622	7 452
Akershus and Oslo	.....	21 487	7 732
Hedmark	.....	79 453	27 228
Oppland	.....	28 580	9 727
Buskerud	.....	34 323	12 407
Vestfold	.....	16 334	5 653
Telemark	.....	21 257	6 935
Aust-Agder	.....	17 626	5 328
Vest-Agder	.....	10 458	3 358
Rogaland	.....	2 157	767
Hordaland	.....	933	530
Sogn og Fjordane	.....	502	218
Møre og Romsdal	.....	6 881	2 193
Sør-Trøndelag	.....	7 213	2 086
Nord-Trøndelag	.....	20 812	5 892
Nordland	.....	5 464	1 606
Troms Romsa	.....	1 601	621
Finnmark Finnmarku	.....	-	-

<sup>1</sup> The figures only comprise work financed with forest trust fund or government subsidies.  
Source: Silviculture, Statistics Norway.

**3.4. Scarification<sup>1</sup>. Area and expenditure, by county**

Year	County	Areal	Expenditure
		Decares	NOK 1 000
1999	.....	80 494	13 627
2000	.....	78 708	13 925
2001	.....	69 132	13 170
2002	.....	83 263	15 409
2003	.....	47 281	7 664
2004	.....	57 733	10 628
2005	.....	49 637	9 359
2006	.....	63 270	11 937
2007	.....	57 877	12 184
2008	.....	48 363	10 408
<b>2008</b>			
<b>County</b>			
Østfold	.....	10	1
Akershus and Oslo	.....	298	71
Hedmark	.....	25 351	4 582
Oppland	.....	7 493	1 568
Buskerud	.....	4 256	1 059
Vestfold	.....	5	1
Telemark	.....	704	193
Aust-Agder	.....	1 665	474
Vest-Agder	.....	611	250
Rogaland	.....	8	3
Hordaland	.....	15	1
Sogn og Fjordane	.....	0	0
Møre og Romsdal	.....	2 027	655
Sør-Trøndelag	.....	3 836	1 054
Nord-Trøndelag	.....	1 956	444
Nordland	.....	58	20
Troms Romsa	.....	70	33
Finnmark Finnmarku	.....	0	0

<sup>1</sup> The figures only comprise work financed with forest trust fund or government subsidies.  
Source: Silviculture, Statistics Norway.

**3.5. Expenditure and public subsidies on silviculture<sup>1</sup>, by county. NOK 1 000**

Year County	Total amount	Of which public subsidies
2001 .....	252 541	87 151
2002 .....	231 397	64 836
2003 .....	123 624	1 382
2004 .....	166 776	28 059
2005 .....	172 116	33 581
2006 .....	170 339	43 159
2007 .....	215 460	52 480
2008 .....	241 113	52 101
<b>2008</b>		
<b>County</b>		
Østfold .....	13 725	2 592
Akershus and Oslo .....	14 203	1 304
Hedmark .....	62 984	5 502
Oppland .....	29 000	3 835
Buskerud .....	24 054	3 750
Vestfold .....	11 625	3 017
Telemark .....	15 079	4 609
Aust-Agder .....	8 871	2 985
Vest-Agder .....	6 335	2 577
Rogaland .....	4 278	1 634
Hordaland .....	1 918	1 048
Sogn og Fjordane .....	1 389	806
Møre og Romsdal .....	5 482	3 246
Sør-Trøndelag .....	11 685	3 458
Nord-Trøndelag .....	21 863	7 055
Nordland .....	5 434	2 484
Troms Romsa .....	3 188	2 199
Finnmark Finnmarku .....	-	-

<sup>1</sup> The figures only comprise work financed with forest trust fund or government subsidies.

Source: Silviculture, Statistics Norway.

## 4. Forest roads for motor vehicles

### 4.1. Introduction and history

The purpose of the statistics is to provide information at county level on the construction of forest roads. Statistics extend back to the working year 1932/33.

### 4.2. Users and applications

The statistics are used by public agencies (Ministries, county authorities), forest owners' organisations and research institutes. In recent years there has been increasing interest from environmental organisations.

Results from the forest roads statistics are included in the Aggregate Account for Forestry, which is compiled by Statistics Norway. The figures are also used annually in the publication Natural Resources and the Environment.

### 4.3. Population and publishing

In principle, the statistics cover all private forest roads for motor vehicles. Data on roads built without public subsidies are however somewhat incomplete.

The data cover roads that are finished and approved during the report year.

The figures are published annually.

### 4.4. Data sources and collection of data

Data on roads built with subsidies or public loans come from the Forest Trust Fund (SKAS) database.

The County Department of Agricultural Affairs keeps data on roads built without subsidies or loans manually.

The statistical data on newly built and rebuilt forest roads are collected by the Forest Trust Fund (SKAS). The Norwegian Agricultural Authority extracts data from the Forest Trust Fund database and forwards them to Statistics Norway. The County Department of Agricultural Affairs reports roads built without subsidies or loans to Statistics Norway.

### 4.5. Sampling

Total census.

### 4.6. Control and revision

If the data are unclear, the Ministry of Agriculture and Food or the County Department of Agricultural Affairs is contacted so that any errors can be corrected. After compilation, the statistics are sent to the Ministry of Agriculture and Food for additional inspection.

### 4.7. Estimation

Number of roads, length and expenditure are summarised and distributed by county and country.

### 4.8. Concepts, variables and classifications

Forest roads are divided into two groups, (i) *whole-year roads, summer roads* and (ii) *winter roads for lorries and roads for tractors*.

*Definitions of the main concepts and variables*

In accordance with the Ministry of Agriculture and Food's classification of road standards, *whole-year roads and summer roads* are included in road classes 2-5:

- *Road class 2*, main road/branch road
- *Road class 3*, whole-year agriculture road
- *Road class 4*, summer motor road (for timber lorries with trailer)
- *Road class 5*, summer motor road (for timber lorries without trailer)

Road classes 2 and 3 are roads with a carrying capacity and gradient for year-round use for timber lorries with a trailer. Road classes 4 and 5 have the same carrying capacity, but these roads have a higher gradient and are therefore approved only for summer use.

*Winter roads and tractor roads* are included in road classes 6-8:

- *Road class 6*, winter motor road
- *Road class 7*, heavy tractor road
- *Road class 8*, light tractor road

Timber lorries can only use road class 6 when the ground is frozen or covered with snow. Load carriers and tractors can use road class 7 all year round except in the spring when the frozen ground melts. Road class 8 is built with a lower demand for breadth, carrying capacity and gradient than road class 7.

The roads standards are further described at the following website:

<http://www.skogkurs.no/vegnormaler/index.html>

#### 4.9. Sources of error and uncertainty

*Measurement and processing errors*

In some cases, forest roads built with public subsidies can be given retrospective approval. Adaptations to the subsidies system may also be made.

*Non-response errors*

Data on roads built with subsidies are assumed to be complete. Data on roads built without subsidies may not be complete because not all road projects are reported. The data collected on the building of forest roads are therefore regarded as minimum figures.

#### 4.10. Comparability and coherence

*Comparability over time and space*

Initially, when the work on the statistics commenced, it was difficult to break down the data for each year. The overview of forest motor roads built before 1 July 1950 is therefore a summary of all forest roads built from the working year 1932/33 to 1 July 1950.

*Coherence with other statistics*

The total road area is published on the website:

<http://www.ssb.no/english/subjects/01/01/>

#### 4.11. Main results

In total, 74 kilometres of new whole year roads and summer roads and 236 kilometres of winter and tractor roads were completed in 2008. This is 16 and 27 kilometres more than in the previous year respectively.

Total costs for construction and reconstruction of forest roads amounted to NOK 124 million in 2008. Government subsidies accounted for NOK 38 million of the costs. The average expenditure was NOK 238 per metre of whole year roads and summer roads and NOK 96 per metre of winter roads and tractor roads. Among the counties, Sogn og Fjordane came out on top with the completion of 18 kilometres of new whole year roads and summer roads, representing an increase of 8 kilometres from 2007.

Although there is little construction of new forest roads, the total length of such roads in Norway is extensive; a total of 48 400 kilometres of whole year roads and summer roads at the end of 2006. By comparison, the total length of public roads in Norway is 93 000 kilometres.

#### 4.12. Availability

[http://www.ssb.no/english/subjects/10/04/20/skogsvei\\_en/](http://www.ssb.no/english/subjects/10/04/20/skogsvei_en/)

*More tables in StatBank* [03772: Forest roads constructed and rebuilt. Whole-year roads and summer roads for lorries \(C\) \(1999 - 2008\)](#)  
[03773: Forest roads constructed and rebuilt. Winter roads for lorries and roads for tractors \(C\) \(1999 - 2008\)](#)  
[03771: Forest roads constructed and rebuilt. Expenditure \(NOK 1 000\). \(C\) \(1999 - 2008\)](#)  
[06057: Whole-year roads for lorries. Total road length \(km\). \(C\) \(2006\)](#)  
[05496: Forest roads constructed and rebuilt. Expenditure \(NOK 1 000\). \(C\) \(2004 - 2008\)](#)  
[05498: Forest roads constructed and rebuilt. Average expenditure \(NOK 1 000\). \(C\) \(2004 - 2008\)](#)

*Storage of microdata* Microdata are stored in Statistics Norway.

**4.1. Forest roads constructed and rebuilt. Number of roads and length, by county**

Year	County	Whole-year roads and summer roads for lorries			Winter roads for lorries and roads for tractors		
		Number of roads	Length of roads newly completed	Length of roads rebuilt	Number of roads	Length of roads newly completed	Length of roads rebuilt
		km			km		
1991	.....	1 132	768	683	2 936	1 861	61
1992	.....	1 252	780	766	3 010	1 899	53
1993	.....	865	523	641	1 934	1 328	50
1994	.....	803	482	532	1 526	987	30
1995	.....	778	376	436	1 466	903	43
1996	.....	709	303	327	1 410	832	18
1997	.....	721	284	359	1 361	745	79
1998	.....	690	290	503	1 332	707	30
1999	.....	656	218	432	925	575	29
2000	.....	636	166	436	1 025	614	30
2001	.....	511	176	434	761	470	25
2002	.....	597	189	500	989	605	59
2003	.....	480	130	410	703	382	63
2004	.....	343	93	300	681	305	77
2005	.....	270	56	202	525	230	63
2006	.....	283	68	221	504	234	55
2007	.....	320	58	196	553	209	79
2008	.....						
<b>2008</b>							
<b>County</b>							
Østfold	.....	10	-	15	-	-	-
Akershus and Oslo	.....	22	2	11	7	1	2
Hedmark	.....	22	8	46	21	8	5
Oppland	.....	62	9	88	42	4	13
Buskerud	.....	31	4	17	56	23	6
Vestfold	.....	41	1	25	38	4	6
Telemark	.....	67	2	43	173	57	25
Aust-Agder	.....	30	4	14	39	19	6
Vest-Agder	.....	17	1	6	69	24	10
Rogaland	.....	6	-	6	31	13	1
Hordaland	.....	8	4	2	6	2	1
Sogn og Fjordane	.....	26	18	5	26	13	1
Møre og Romsdal	.....	23	3	12	18	10	1
Sør-Trøndelag	.....	6	2	9	22	9	0
Nord-Trøndelag	.....	17	5	7	16	9	4
Nordland	.....	14	5	8	23	23	3
Troms Romsa	.....	11	4	3	22	16	4
Finnmark Finnmarku	.....	-	-	-	-	-	-
<b>Way of financing</b>							
With public subsidies	.....	253	58	269	115	80	31
Without public subsidies	.....	160	16	47	494	156	55

Source: Forest roads for motor vehicles, Statistics Norway.

**4.2. Forest roads constructed and rebuilt. Expenditure, by county. NOK 1 000**

Year	County	Expenditure			Public subsidies
		Total	Whole-year roads and summer roads for lorries	Winter roads for lorries and roads for tractors	
1994	.....	214 010	156 682	57 327	79 256
1995	.....	185 625	124 262	61 363	65 078
1996	.....	170 399	118 041	52 358	65 681
1997	.....	152 178	106 546	45 632	54 580
1998	.....	178 121	133 945	44 176	67 832
1999	.....	164 339	119 142	45 197	61 213
2000	.....	164 211	116 028	48 183	63 553
2001	.....	148 192	113 247	34 945	54 757
2002	.....	184 954	136 911	48 043	68 685
2003	.....	149 296	110 111	39 185	55 360
2004	.....	123 044	90 584	32 460	43 178
2005	.....	96 863	66 582	30 281	29 220
2006	.....	84 599	58 969	25 631	29 574
2007	.....	84 146	62 587	21 558	26 232
2008	.....	123 813	92 899	30 914	38 001
<b>2008</b>					
<b>County</b>					
Østfold	.....	2 122	2 122	0	604
Akershus and Oslo	.....	3 196	3 067	129	416
Hedmark	.....	9 641	8 728	913	2 521
Oppland	.....	19 815	19 008	807	6 022
Buskerud	.....	4 830	2 751	2 079	305
Vestfold	.....	7 428	6 831	597	1 883
Telemark	.....	12 034	8 305	3 729	2 738
Aust-Agder	.....	11 198	7 888	3 310	3 356
Vest-Agder	.....	8 419	2 284	6 135	1 650
Rogaland	.....	3 176	871	2 305	766
Hordaland	.....	4 701	3 994	707	2 384
Sogn og Fjordane	.....	11 860	8 908	2 952	3 340
Møre og Romsdal	.....	7 736	5 876	1 860	3 442
Sør-Trøndelag	.....	4 968	4 157	811	1 741
Nord-Trøndelag	.....	3 874	3 152	722	1 438
Nordland	.....	5 639	3 677	1 962	3 287
Troms Romsa	.....	3 172	1 278	1 894	2 108
Finmark Finnmarku	.....	-	-	-	-
<b>Way of financing</b>					
With public subsidies	.....	98 010	83 653	14 357	38 001
Without public subsidies	.....	25 803	9 246	16 557	.

Source: Forest roads for motor vehicles, Statistics Norway.

**4.3. Average expenditure for forest road constructions<sup>1</sup>. 1990-2008. NOK per metre**

Year	Whole-year roads and summer roads for lorries			Winter roads for lorries and roads for tractors			
	All	With public subsidies	Without public subsidies	All	With public subsidies	Without public subsidies	
1990	.....	133	144	54	45	56	24
1991	.....	146	152	65	46	59	25
1992	.....	144	150	55	51	62	26
1993	.....	148	152	69	54	68	24
1994	.....	155	162	54	56	68	27
1995	.....	153	166	57	65	78	36
1996	.....	187	202	72	62	80	30
1997	.....	166	173	81	55	70	31
1998	.....	169	179	57	60	39	34
1999	.....	183	189	94	75	92	36
2000	.....	193	205	67	75	96	35
2001	.....	186	197	96	71	90	44
2002	.....	199	208	95	72	86	47
2003	.....	204	217	98	88	114	50
2004	.....	230	257	86	113	54	85
2005	.....	258	263	199	103	119	91
2006	.....	204	218	106	89	129	54
2007	.....	247	292	113	75	126	52
2008	.....	238	255	148	96	129	78

<sup>1</sup> Comprise new constructions and roads rebuilt.

Source: Forest roads for motor vehicles, Statistics Norway.



**4.4. Whole-year roads and summer roads for lorries. Total road length. km**

County	Length
<b>2006<sup>1</sup></b> .....	<b>48 406</b>
<b>County</b>	
Østfold .....	1 636
Akershus and Oslo .....	2 918
Hedmark .....	11 612
Oppland .....	6 951
Buskerud .....	6 144
Vestfold .....	1 241
Telemark .....	4 905
Aust-Agder .....	2 418
Vest-Agder .....	654
Rogaland .....	305
Hordaland .....	837
Sogn og Fjordane .....	572
Møre og Romsdal .....	1 075
Sør-Trøndelag .....	2 284
Nord-Trøndelag .....	3 420
Nordland .....	300
Troms Romsa .....	944
Finnmark Finnmárku .....	190

<sup>1</sup> At 1 January 2006.

Source: The Norwegian Mapping Authority.

## 5. Commercial roundwood removals

### 5.1. Introduction and history

The purpose of the statistics is to provide detailed information at municipal level on commercial roundwood removals.

The statistics date back to 1918/19, but annual figures at municipal level are available from the working year 1936/37. At that time, statistics only covered quantity cut distributed by industrial wood and wood fuel of coniferous and broad leaved species.

Since then the following changes have been made:

- *Buyer group* was included from the working year 1962/63
- *Gross value* was included from the working year 1965/66
- *The division of the assortments* has varied over the course of time. The division used today was introduced in the working year 1970/71.
- *Seller group* was included from the working year 1980/81
- From 1996 the statistics follow the calendar year
- From 2006 the statistics do not include figures on wood fuel
- From 2006 average roundwood prices per cubic metre are provided

### 5.2. Users and applications

The statistics are used by public authorities, research and educational institutions, professional and industrial bodies, international organisations etc. The results are also used in the Aggregate account of forestry prepared by Statistics Norway.

### 5.3. Population and publishing

The statistics cover all industrial roundwood for sale. The wood registered is net removals excluding rot, unusable tops, etc. The quantity cut is given in cubic metres of solid wood inside bark by assortments, seller groups and buyer groups.

Until 1995/96, the statistics followed the working year (1 August-31 July). Since 1996, the figures have referred to calendar years.

Figures on wood fuel have not been included since 2006.

The figures are published annually.

### 5.4. Data sources and collection of data

Until 31 December 1995, quantities cut for sale from private forests and municipal forests were reported by the municipal forest administration, and wood from common forests and State forests by their respective management. The reports were collected by the forest administration in each county and forwarded to Statistics Norway.

Since January 1996, the figures on industrial wood have been provided by the Ministry of Agriculture and Food through the Register of Timber Trade and Diverted Forest Trust Fund. The firm Skog-Data AS manages the register. The data in the register comes from the scaling of the timber sold.

The figures on wood fuel have not been included since 2006. Before 2006, figures on wood fuel were estimated by the County Department of Agricultural Affairs.

Because of the changeover from one data source to another on 1 January 1996, the statistics for the working year 1995/96 are based on both the reports by the municipal forest administration and the Register of Timber Trade and Diverted

Forest Trust Fund. Data for removals in the period 1 August to 31 December 1995 were reported on paper forms from the municipal forest administration and the management of common and State forests. Data for removals in the period 1 January to 31 July 1996 were collected electronically from Skog-Data AS. Since 1996, the data have been based on all scaled quantities of roundwood reported to Skog-Data AS. Quantities sold as stumpage are registered when the sales contract is signed.

### 5.5. Sampling

All quantities of roundwood cut for sale during a calendar year are scaled and reported to Skog-Data AS.

### 5.6. Control and revision

The data are checked in Statistics Norway with the focus on likely buyer group and likely price level for each assortment. Missing information is collected from the County Department of Agricultural Affairs. Corrections and additional payments that refer to another year are removed, if discovered.

### 5.7. Estimation

Roundwood quantity and gross margin are summarised per municipality, assortment, buyer and seller group. The average price per assortment is then estimated.

### 5.8. Confidentiality

Any statistics based on three respondents or less are not published.

### 5.9. Concepts, variables and classifications

*Definitions of the main concepts and variables*

*Gross value of industrial roundwood* is the value of the wood at the place of delivery to the buyer (road, factory yard, etc.).

*Industrial roundwood* is all roundwood removal except wood fuel.

*Assortments*

*Special timber* includes poles, veneer logs, saw logs of veneer quality, and other timber of special high quality.

*First class saw logs* refer to saw logs classified as first class according to measurement regulations.

*Second class saw logs* refer to saw logs classified as second class according to measurement regulations.

*Other saw logs* comprise ordinary top-scaled and mid-scaled saw logs and other logs suitable for sawing, not measured in quality classes.

*Unsorted saw logs and pulpwood* comprise timber measured in tree length, wood sold as stumpage and other unsorted roundwood containing both saw logs and pulpwood.

*Pulpwood* comprises roundwood generally used in the pulp industries and the fibreboard and particle board industries. Top-scaled timber (timber suitable for sawing) used in these industries is not included.

*Other roundwood* comprises roundwood used for manufacture of cases and casks, pitprops and mining timber, pilings, fence wood, posts etc.

*Wood fuel* refers to roundwood sold for fuel.

*Buyer groups* *Sawmills and wood industries* comprise sawmills, manufacture of cases and casks, and prefabrication of wooden houses and wooden structures.

*Pulp industries* include the manufacture of mechanical and chemical pulp.

*Fibre and particle board industries* comprise wallboard and particle board production only.

*Other Norwegian buyers* comprise wood preserving industries, the manufacture of wood furniture and fixtures, charcoal, wood flour, wood wool, veneer and flooring, matches, ship and boat-building as well as all other buyers not included in other groups. Until 1998, wood for export was included.

*Foreign buyers* include sawmills, industry or other buyers outside Norway. These buyers were included in "Other buyers" until 1998.

*Standard classifications* Classification of forest owners with at least 25 decares of productive forest area by owner group  
Classification of buyers and sellers of industrial roundwood  
Tree species and assortment used by commercial roundwood removals

### 5.10. Sources of error and uncertainty

*Measurement and processing errors* The statistics on industrial wood removals are thought to be quite accurate at county level. Sources of errors are corrections and additional payments registered with insufficient information.

The quantities given in the assortment "Unsorted saw logs and pulpwood" are probably too high. This is due to the fact that some of the roundwood removals are reported on paper forms where assortments are not specified. These removals are all registered as "Unsorted saw logs and pulpwood". Wood sold as stumpage is included in "Unsorted saw logs and pulpwood". Wood sold as stumpage may be harvested another year than it is sold. Since 1996, the gross value of this wood has excluded costs for cutting and hauling. These two circumstances explain the varying average prices for this assortment.

### 5.11. Comparability and coherence

*Comparability over time and space* The breaks in the time series are explained in chapter 5.1.

*Coherence with other statistics* Final results are almost equal to preliminary results at county level and country level, but can differ considerably at municipal level.

### 5.12. Main results

In 2008, a total of 8.1 million cubic metres of timber were cut for sale. For the country as a whole, the timber price was NOK 364 per cubic metre.

In 2007, a total of 8.2 million cubic metres were cut for sale and the average timber price was NOK 375 per cubic metre.

In 2008, spruce amounted to 6.1 million cubic metres and pine 1.9 million cubic metres of the total removals. Broad leaved came to a total of 88 000 cubic metres. The aggregated gross value of roundwood sold to the manufacturing industry in 2008 amounted to NOK 2.9 billion. In 2007, the corresponding figure was NOK 3.1 billion.

Final figures at municipality level are published in [Statbank](#).

### 5.13. Availability

*Final results* [http://www.ssb.no/english/subjects/10/04/20/skogav\\_en/](http://www.ssb.no/english/subjects/10/04/20/skogav_en/)

*More tables in Today's statistics* [Table 1 Commercial roundwood removals, by county. 1 000 m<sup>3</sup>](#)  
[Table 2 Commercial removals of industrial roundwood, by buyer group and county. 2008. m<sup>3</sup>](#)  
[Table 3 Average prices on timber, by species of tree and county. 2008. NOK per m<sup>3</sup>](#)

*More tables in StatBank* [07405: Average price per cubic metre, by assortment \(NOK per m<sup>3</sup>\) \(2006M01 - 2008M12\)](#)  
[07413: Average price per cubic metre, by assortment \(NOK per m<sup>3</sup>\) \(2006 - 2008\)](#)  
[06216: Average price per cubic metre, by assortment \(NOK per m<sup>3</sup>\) \(C\) \(1996 - 2008\)](#)  
[06986: Average price per cubic metre, by assortment \(NOK per m<sup>3</sup>\) \(C\) \(1980-1981 - 1995-1996\)](#)  
[03834: Commercial roundwood removals \(1 000 m<sup>3</sup>\) \(1996 - 2008\)](#)  
[07410: Commercial roundwood removals, by assortment group \(1 000 m<sup>3</sup>\) \(2006 - 2008\)](#)  
[07411: Commercial roundwood removals \(1 000 m<sup>3</sup>\) \(2006 - 2008\)](#)  
[07406: Commercial removals of industrial roundwood, by species of tree \(1 000 m<sup>3</sup>\) \(C\) \(2006K1 - 2008K4\)](#)  
[07412: Commercial removals of industrial roundwood, by species of tree \(1 000 m<sup>3</sup>\) \(C\) \(2006 - 2008\)](#)  
[03895: Commercial removals of industrial roundwood, by assortment \(m<sup>3</sup>\) \(M\) \(1996 - 2008\)](#)  
[06966: Commercial roundwood removals, by assortment \(m<sup>3</sup>\) \(M\) \(1980-1981 - 1995-1996\)](#)  
[03908: Commercial removals of industrial roundwood, by species of tree and buyer group \(m<sup>3</sup>\) \(M\) \(1998 - 2008\)](#)  
[06395: Commercial removals of industrial roundwood, by species of tree and buyer group \(m<sup>3</sup>\) \(M\) \(1996 - 1997\)](#)  
[06965: Commercial roundwood removals, by species of tree and buyer group \(m<sup>3</sup>\) \(M\) \(1980-1981 - 1995-1996\)](#)  
[03795: Commercial roundwood removals, by species of tree \(m<sup>3</sup>\) \(M\) \(1996 - 2008\)](#)  
[06964: Commercial roundwood removals, by species of tree \(m<sup>3</sup>\) \(M\) \(1980-1981 - 1995-1996\)](#)  
[03794: Gross value. Commercial roundwood removals \(NOK 1 000\) \(M\) \(1996 - 2008\)](#)  
[06963: Gross value. Commercial roundwood removals \(NOK 1 000\) \(M\) \(1980-1981 - 1995-1996\)](#)  
[04454: Commercial roundwood removals \(1 000 m<sup>3</sup>\) \(1923-1924 - 1995-1996\)](#)

*Storage of microdata* Microdata are stored in Statistics Norway.

**5.1. Commercial removals of industrial roundwood, by buyer group, species of tree and assortment. 2008. m<sup>3</sup>**

	Total removals	Buyer group				Foreign buyers
		Sawmills and wood industries	Mechanical and chemical pulp industries	Fibre and particle board industries	Other Norwegian buyers	
<b>Total removals</b> .....	<b>8 070 780</b>	<b>3 735 188</b>	<b>2 857 641</b>	<b>148 641</b>	<b>564 648</b>	<b>764 662</b>
<b>Spruce</b>						
<b>Total</b> .....	<b>6 064 801</b>	<b>2 745 793</b>	<b>2 369 414</b>	<b>72 825</b>	<b>323 351</b>	<b>553 418</b>
Special timber .....	42 275	34 242	4 695	0	3 335	3
First class saw logs .....	207 954	204 050	531	0	755	2 618
Second class saw logs .....	120 385	117 985	353	0	25	2 022
Other saw logs .....	2 382 654	2 095 471	216 328	0	48 167	22 688
Unsorted saw logs and pulpwood .....	268 808	245 702	16 087	285	6 734	0
Pulpwood .....	3 041 929	48 312	2 131 420	72 540	263 570	526 087
Other roundwood .....	796	31	0	0	765	0
<b>Pine</b>						
<b>Total</b> .....	<b>1 917 615</b>	<b>985 532</b>	<b>448 401</b>	<b>75 790</b>	<b>223 283</b>	<b>184 609</b>
Special timber .....	77 604	30 543	69	0	46 992	0
First class saw logs .....	135 214	124 203	0	0	212	10 799
Second class saw logs .....	245 645	243 964	0	0	712	969
Other saw logs .....	605 527	560 600	4 711	0	31 631	8 585
Unsorted saw logs and pulpwood .....	26 365	15 276	517	0	10 572	0
Pulpwood .....	793 750	10 895	443 061	75 790	99 748	164 256
Other roundwood .....	33 510	51	43	0	33 416	0
<b>Broad-leaved</b>						
<b>Total</b> .....	<b>88 364</b>	<b>3 863</b>	<b>39 826</b>	<b>26</b>	<b>18 014</b>	<b>26 635</b>
Special timber and saw logs ..	4 201	2 614	0	0	1 587	0
Pulpwood .....	84 163	1 249	39 826	26	16 427	26 635

Source: Commercial roundwood removals, Statistics Norway.

**5.2. Commercial removals of industrial roundwood, by seller group, species of tree and assortment. 2008. m<sup>3</sup>**

	Total removals	Seller group		
		Private and municipalities	Central government and the Educational Fund	Common forests
<b>Total removals</b> .....	<b>8 070 780</b>	<b>7 608 709</b>	<b>211 700</b>	<b>250 371</b>
<b>Spruce</b>				
<b>Total</b> .....	<b>6 064 801</b>	<b>5 734 816</b>	<b>132 222</b>	<b>197 763</b>
Special timber .....	42 275	42 187	88	-
First class saw logs .....	207 954	204 405	826	2 723
Second class saw logs .....	120 385	117 092	1 039	2 254
Other saw logs .....	2 382 654	2 245 615	53 836	83 203
Unsorted saw logs and pulpwood .....	268 808	268 734	74	-
Pulpwood .....	3 041 929	2 855 987	76 359	109 583
Other roundwood .....	796	796	-	-
<b>Pine</b>				
<b>Total</b> .....	<b>1 917 615</b>	<b>1 791 080</b>	<b>74 622</b>	<b>51 913</b>
Special timber .....	77 604	75 205	1 312	1 087
First class saw logs .....	135 214	130 575	2 754	1 885
Second class saw logs .....	245 645	237 822	4 188	3 635
Other saw logs .....	605 527	554 136	34 221	17 170
Unsorted saw logs and pulpwood .....	26 365	25 366	-	999
Pulpwood .....	793 750	735 814	30 799	27 137
Other roundwood .....	33 510	32 162	1 348	-
<b>Broad-leaved</b>				
<b>Total</b> .....	<b>88 364</b>	<b>82 813</b>	<b>4 856</b>	<b>695</b>
Special timber and saw logs ..	4 201	4 201	-	-
Pulpwood .....	84 163	78 612	4 856	695

Source: Commercial roundwood removals, Statistics Norway.

**5.3. Commercial removals of industrial roundwood, by buyer group. County. 2008. m<sup>3</sup>**

Nr. County	All groups	Sawmills and wood industries	Mechanical and chemical pulp industries	Fibre and particle board industries	Other Norwegian buyers	Foreign buyers
<b>The whole country .....</b>	<b>8 070 780</b>	<b>3 735 188</b>	<b>2 857 641</b>	<b>148 641</b>	<b>564 648</b>	<b>764 662</b>
Østfold .....	505 830	216 537	273 108	-	2 156	14 029
Akershus .....	560 078	275 942	201 652	-	2 191	80 293
Oslo .....	23 817	20 064	3 306	-	41	406
Hedmark .....	2 239 081	1 013 098	491 722	-	159 949	574 312
Oppland .....	1 072 487	512 897	434 034	77 974	3 042	44 540
Buskerud .....	945 314	433 582	474 718	28	11 170	25 816
Vestfold .....	358 087	160 895	188 109	-	3 389	5 694
Telemark .....	627 402	310 116	304 852	1 971	3 744	6 719
Aust-Agder .....	326 524	162 049	81 424	47 293	35 237	521
Vest-Agder .....	165 032	70 761	69 153	8 592	9 608	6 918
Rogaland .....	100 534	28 418	62 646	-	5 247	4 223
Hordaland .....	94 602	40 384	43 282	70	10 866	-
Sogn og Fjordane .....	45 062	24 926	19 221	-	915	-
Møre og Romsdal .....	85 084	51 327	14 033	-	19 724	-
Sør-Trøndelag .....	279 844	137 828	28 837	-	111 988	1 191
Nord-Trøndelag .....	505 671	213 093	146 442	-	146 136	-
Nordland .....	135 350	63 156	21 102	12 465	38 627	-
Troms Romsa .....	981	115	-	248	618	-
Finmark Finnmarku .....	-	-	-	-	-	-

Source: Commercial roundwood removals, Statistics Norway.

**5.4. Average prices on spruce, by assortment. County. 2008. NOK per m<sup>3</sup>**

Nr. County	All species of tree	Spruce							
		Spruce, total	Special timber	First class saw logs	Second class saw logs	Other saw logs	Unsorted saw logs and pulpwood	Pulpwood	Other roundwood
<b>The whole country .....</b>	<b>364</b>	<b>362</b>	<b>501</b>	<b>508</b>	<b>437</b>	<b>455</b>	<b>354</b>	<b>275</b>	<b>417</b>
Østfold .....	357	363	465	530	476	437	346	276	.
Akershus .....	376	375	501	521	463	454	371	277	.
Oslo .....	381	385	.	569	546	433	.	276	.
Hedmark .....	376	374	667	513	467	476	347	277	429
Oppland .....	371	372	541	516	424	477	362	276	343
Buskerud .....	362	355	501	514	427	449	346	279	.
Vestfold .....	355	358	484	584	486	457	351	273	.
Telemark .....	349	347	781	498	428	423	326	282	.
Aust-Agder .....	349	349	794	466	404	444	335	276	.
Vest-Agder .....	342	334	.	467	401	395	354	284	.
Rogaland .....	302	302	490	312	297	415	406	252	.
Hordaland .....	318	316	464	311	.	417	.	243	.
Sogn og Fjordane .....	316	309	330	464	347	314	338	235	.
Møre og Romsdal .....	385	360	.	432	.	421	.	282	.
Sør-Trøndelag .....	363	362	597	.	.	442	381	271	.
Nord-Trøndelag .....	356	357	599	561	.	445	403	274	.
Nordland .....	342	344	530	342	537	422	323	278	.
Troms Romsa .....	350	408	.	.	.	448	350	226	.
Finmark Finnmarku .....	.	.	.	.	.	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.

**5.5. Average prices of pine, by assortment. County. 2008. NOK per m<sup>3</sup>**

Nr. County	All species of tree	Pine							
		Pine, total	Special timber	First class saw logs	Second class saw logs	Other saw logs	Unsorted saw logs and pulpwood	Pulpwood	Other roundwood
<b>The whole country</b> .....	<b>364</b>	<b>374</b>	<b>697</b>	<b>488</b>	<b>395</b>	<b>451</b>	<b>378</b>	<b>258</b>	<b>352</b>
Østfold .....	357	342	752	515	382	357	477	246	795
Akershus .....	376	385	742	515	393	481	.	251	791
Oslo .....	381	287	.	449	354	.	.	255	.
Hedmark .....	376	386	699	483	401	459	354	262	336
Oppland .....	371	365	689	526	377	452	354	255	346
Buskerud .....	362	378	689	557	383	458	507	257	373
Vestfold .....	355	389	714	551	417	447	.	252	.
Telemark .....	349	357	711	459	395	336	310	263	600
Aust-Agder .....	349	358	682	473	399	276	345	265	599
Vest-Agder .....	342	371	720	467	386	463	420	260	.
Rogaland .....	302	298	.	334	329	400	344	248	.
Hordaland .....	318	339	377	528	369	401	256	204	.
Sogn og Fjordane .....	316	368	.	549	382	400	359	198	.
Møre og Romsdal .....	385	445	848	626	431	528	444	251	.
Sør-Trøndelag .....	363	381	965	590	422	497	296	250	287
Nord-Trøndelag .....	356	350	667	510	378	441	.	241	.
Nordland .....	342	324	.	569	391	373	450	251	.
Troms Romsa .....	350	348	.	.	.	451	.	200	.
Finnmark Finnmarku .....	.	.	.	.	.	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.

**5.6. Average prices of broad-leaved wood, by assortment. County. 2008. NOK per m<sup>3</sup>**

Nr. County	All species of tree	Broad-leaved		
		Broad-leaved, total	Special timber and sawlogs	Pulpwood
<b>The whole country</b> .....	<b>375</b>	<b>239</b>	<b>396</b>	<b>232</b>
Østfold .....	366	226	454	210
Akershus .....	386	247	335	243
Oslo .....	423	253	.	253
Hedmark .....	388	251	285	251
Oppland .....	378	239	430	238
Buskerud .....	373	252	323	248
Vestfold .....	368	219	407	207
Telemark .....	359	219	416	215
Aust-Agder .....	358	229	420	212
Vest-Agder .....	356	275	409	218
Rogaland .....	321	293	336	269
Hordaland .....	313	271	306	254
Sogn og Fjordane .....	316	.	.	.
Møre og Romsdal .....	390	217	683	209
Sør-Trøndelag .....	374	228	294	222
Nord-Trøndelag .....	366	240	468	229
Nordland .....	340	240	357	227
Troms Romsa .....	296	292	339	253
Finnmark Finnmarku .....	.	.	.	.

Source: Commercial roundwood removals, Statistics Norway.



## 6. Forestry, structural statistics

### 6.1. Introduction and history

The purpose of these statistics is to provide an overview of both the forest properties and forestry as an industry. The statistics also provide information on age, sex, income and education of forest owners.

Since 2006, Statistics Norway has published annual statistics for all forest properties by merging data from different administrative data sources. Prior to this, statistics for all forest properties were only available based on full censuses, the last of which was in 1989.

### 6.2. Users and applications

The main users of the statistics are professional forestry organisations, The Ministry of Agriculture and Food and various research and educational institutions.

### 6.3. Population and publishing

The statistics comprise all properties in the Farm Register of the Norwegian Agricultural Authority with at least 25 decares of productive forest area. Some forest owners are represented in the Farm Register with more than one property within one municipality. In these cases, the properties owned by the same owner are merged into one property within the municipality. Thus the statistics on forest properties will include fewer units than the Farm Register. Common forests owned by the central government (Statsallmenning) will always be counted as one single property.

In the statistics on personal forest owners, the forest owners' productive forest areas in Norway are aggregated, independent of municipality borders. Statistics on incomes are based on the forest owners' municipality for tax purposes. Other individual statistics on personal forest owners are based on the municipality where the forest owners live.

Statistics on average incomes, debt, gross property and assessed taxes are published for personal forest owners with positive self-employment income from forestry. Incomes, debt, gross property and assessed taxes are published solely for personal forest owners and are aggregated for the same owners and their spouses and cohabitants.

The figures are published annually.

### 6.4. Data sources and collection of data

The statistics are derived from existing administrative data files.

The Farm Register of the Norwegian Agricultural Authority serves as the backbone of the statistics. The information from the Farm Register is combined with information at property level from different data sources such as the Register of Timber Trade and Diverted Trust Fund, and the Forest Trust Fund. Information on the forest owners comes from the Central Population Register, the Register on Personal Tax Returns and the Register on Tax Assessment for Personal Taxpayers.

### 6.5. Sampling

The statistics are derived from the whole population of forest properties.

## 6.6. Control and revision

The statistics are based on linked data files that were edited separately when established. The information on the productive forest area of the properties in the Farm Register is checked if errors are suspected. Examples: i) If a forest property has commercial felling and does not have a forest area. ii) If a large forest property does not have commercial felling.

## 6.7. Confidentiality

Figures are not presented if there is a risk of identifying any respondent.

Concepts, variables and classifications

## 6.8. Concepts, variables and classifications

*Definition of the concepts and vari*

*Forest property:* property with at least 25 decares of productive forest area.

Property parcels belonging to the same owner within one municipality are treated as one property.

*Personal forest owner:* forest owner owning forest area as an individual owner. Forest areas owned jointly by several individuals are included for one of the owners; the reference owner.

*Legal owners:* central government, the Educational Fund, common forest owned by the central government (“Statsallmenning”), common forest not owned by the central government (“Bygdeallmenning”), limited company, foundation, municipality etc.

*Standard classifications*

County

Classification of forest properties by size class

## 6.9. Sources of error and uncertainty

*Measurement and processing errors*

The main concern is the quality of the Farm Register. The productive forest area of properties is sometimes missing or erroneous. We also believe that some small properties may be missing in the register. Furthermore, errors may arise when data are entered into the various administrative registers.

About 2-3 per cent of the quantity of commercial roundwood felled is not linked to any property in the population.

With regard to co-operative ownership, the statistics on forest owners comprise only the reference owner. Self-employment income from forestry for the remaining personal owners in the co-operative is not included. In total, 3-4 per cent of the self-employment income from forestry is missing.

*Non-response errors*

In reality, the number of personal forest owners is higher than in these statistics, because only the reference owner in a co-ownership is included. Some personal forest owners are deceased and no new owner has been registered, some live abroad or information is missing for other reasons. These owners amount to 3-4 per cent of the personal forest owners and are excluded from the statistics on incomes.

## 6.10. Comparability and coherence

*Comparability over time and space*

The statistics on forest properties are comparable with statistics from the Census of Forestry 1967 and the Censuses of Agriculture and Forestry 1979 and 1989. They are also essentially comparable with statistics from the Sample Survey of Agriculture and Forestry in the 1990s and in 2000, 2004 and 2008. The number of forest properties has fallen from 128 300 in 1967 to 116 502 in 2005. The Censuses of Agriculture and Forestry 1979 and 1989 calculated 120 900 and 125 500 forest

properties respectively. It is difficult to trace all small-sized properties without commercial felling. In some regions it is difficult to assess whether the areas are productive or not. This causes difficulties when comparing the number of forest properties over time.

Statistics are published for both forest properties and personal forest owners. The following is a brief explanation of the relationship between these units: a forest property is the forest owners' total productive forest area within a municipality. A forest owner may own forest properties in more than one municipality. Therefore the number of forest owners is less than the number of forest properties with a personal forest owner. About 113 000 forest properties with a personal owner are registered in The Farm Register. Out of the personal forest owners, almost 3 000 are deceased, living abroad or lacking information. The statistics on incomes are based on the 108 800 living personal forest owners.

*Coherence with other statistics*

Statistics Norway has yearly statistics on commercial roundwood removals and silviculture based on the same sources as these statistics. Linking the Farm Register with these sources makes it possible to publish figures on commercial removals and silviculture by the size of the productive forest area of the properties and the forest owners' productive forest area.

The National Forest Inventory also publishes figures on the productive forest area in Norway. The inventory estimates a productive forest area that is more than 10 per cent larger than the aggregated areas from the forest properties in The Farm Register. The National Forest Inventory estimates the area based on sample plots, and their assessment of whether the areas are productive or not sometimes differs from the forest owners' assessment.

Statistics on the farmers' income and property are provided yearly. These statistics comprise natural persons operating agricultural holdings.

Statistics Norway also presents income statistics for all self-employed persons, see [http://www.ssb.no/english/subjects/05/01/ifpn\\_en/](http://www.ssb.no/english/subjects/05/01/ifpn_en/).

## 6.11. Main results

*Forest properties*

In 2008, timber was cut for sale on 15 400 forest properties. In the last ten years, 42 per cent of the forest properties cut timber for sale at least once. The average roundwood removal last year was 510 cubic metres.

According to the 2008 Farm Register, there are 119 600 forest properties with a productive forest area of 25 decares or more in Norway. Timber for sale was cut on almost 15 400 properties, which is 1 000 fewer than in 2007. Forest owners in the county of Buskerud were most active, with one in four properties carrying out commercial roundwood removals.

A total of 37 500 of the forest properties are owned by a person who also runs an agricultural holding; 700 fewer than in 2006.

The activity level varied considerably between the counties. In the western part of Norway, one in twenty forest properties had commercial removals, and in the northern part of the country the figure was even lower. In the country as a whole, a total of 50 300 forest properties sold timber at least once in the last 10-year period.

In 2008, average commercial roundwood removals per property were 510 cubic metres; a few cubic metres more than in the previous year.

In 2008, the average property size was 577 decares. A total of 2 000 of the properties are owned by the government or other impersonal owners. At the end of 2008, the total registered productive forest area was 69 million decares.

In the beginning of 2008, the forest owners had set aside NOK 962 million in the Forest Trust Fund – NOK 127 million more than the previous year. Hedmark forest owners in total had NOK 191 million at their disposal, and during 2008 a total of nearly NOK 87 million was disbursed from the Forest Trust Fund to the owners. This is more than the paid-up amount this year.

*Personal forest owners* In 2007, 25 400 of the personal forest owners had entrepreneurial income from forestry. The average income from forestry was NOK 34 000; an increase of 9 per cent from 2006.

There are 109 300 personal forest owners with a productive forest area of 25 decares or more in Norway. In 2007, their accumulated entrepreneurial income from forestry was NOK 859 million. In addition, spouses of forest owners had NOK 99 million in income from forestry in the same year. In 2006, the corresponding income was NOK 784 million and NOK 88 million respectively.

In 2007, the average gross income of forest owners with entrepreneurial income from forestry was NOK 453 000. Income from forestry accounted for 7 per cent of the gross income, while other entrepreneurial income accounted for 32 per cent. Income from wages and salaries accounted for 40 per cent, and the remainder was made up of pensions and other income.

Forest owners from Hedmark county had the highest average entrepreneurial income from forestry in 2007, at NOK 57 000. However, Nord-Trøndelag county had the highest proportion of forest owners with positive entrepreneurial income, at 47 per cent. In the three northernmost counties, only a marginal share of forest owners had entrepreneurial income from forestry.

One in four forest owners are women. Women made up 16 per cent of the forest owners with positive forestry income in 2007. Their average entrepreneurial income from forestry was 12 per cent higher than for male forest owners.

About one in three forest properties are combined with an agricultural holding. Forest owners with positive entrepreneurial income from forestry had an agriculture income almost three times as large as the corresponding income from forestry. In 2007, their entrepreneurial income from agriculture was NOK 92 000 on average.

The education level of forest owners is slightly lower than in the population as a whole. While statistics on tertiary education show that one in four in the population had higher education in 2007, this only applied to one in five forest owners. The main reason for this difference is the high average age among forest owners.

## 6.12. Availability

[http://www.ssb.no/english/subjects/10/04/20/stskog\\_en/](http://www.ssb.no/english/subjects/10/04/20/stskog_en/)

*More tables in Today's statistics*

[Table 1 Forest properties by county and size class. 2008](#)

[Table 2 Productive forest area, by county and size class in decares. 2008. Decares](#)

[Table 3 Forest properties with commercial roundwood removals, by county and size of property. 2008](#)

[Table 4 Commercial roundwood removals, by county and property size in decares. Solid cubic metres. 2008](#)

[Table 5 Forest properties in combination with agricultural holding, by county and size of productive forest area. 2008](#)

[Table 7 Forest Trust Fund. Balance payment and disbursement of fund, by county and productive forest area. 2008. NOK 1 000](#)

Table 1 Average incomes, debt, gross wealth and assessed taxes for personal forest owners with positive entrepreneurial income from forestry, by county, size of productive forest area, sex and age. 2007. NOK

Table 2 Average incomes, debt, gross wealth and assessed taxes for personal forest owners with at least 25 decares productive forest area. By county, size of productive forest area, sex and age. 2007. NOK 1000

Table 3 Productive forest area, by where the forest area of personal forest owners are situated. Decares. 2007

Table 4 Entrepreneurial income forestry for personal forest owners, by size of income. 2005 and 2006. NOK 1 000

*More tables in StatBank*

06502: Average incomes, debt, taxable gross wealth and assessed taxes for personal forest owners with entrepreneurial incomes in forestry. (C) (2005 - 2007)

06508: Gross income, debt, taxable gross wealth and assessed taxes for personal forest owners with at least 25 decares productive forest area (C) (2005 - 2007)

06501: Incomes, debt, taxable gross wealth and assessed taxes for personal forest owners and their cohabitants and spouses (NOK 1 000). (C) (2005 - 2007)

06496: Personal forest owners level of education, by county, (C) (2005 - 2007)

06504: Productive forest area, by where the forest area of personal forest owners are situated (decares). (C) (2005 - 2007)

06331: Productive forest area, by size class (decares) (2005 - 2008)

06316: Forest properties combined with agricultural holding, by size of productive forest area (C) (2006 - 2008)

06311: Forest properties, by number of years with commercial roundwood removals (C) (1996-2005 - 1999-2008)

06312: Forest properties, by sex of forest owners and property size (2005 - 2008)

06327: Forest properties, by number of years with commercial roundwood removals and size (1996-2005 - 1999-2008)

06387: Forest properties with commercial roundwood removals, by property size (decares). (C) (2005 - 2008)

06506: Industrial roundwood removals, by size of productive forest area and type of owner (2005 - 2007)

06307: Forest properties, by size class (decares). (C) (2005 - 2008)

06310: Roundwood cut for sale, by size class (m<sup>3</sup>) (2005 - 2008)

06659: Tending of young forest stands and planting, by size of productive forest area (decares). (C) (2006 - 2008)

07366: Productive forest area (decar) (M) (2008)

*Completed time series:*

06314: Forest properties with individual forest owners, by the owners sex and age (C) (2005)

06332: Forest properties with individual forest owners, by sex, age and size (2005)

*Storage of microdata*

Microdata are stored at Statistics Norway.

**6.1. Forest properties<sup>1</sup> by county and size class. 2008**

County	Total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1 000-1 999	2 000-4 999	5 000-19 999	> 20 000
<b>The whole country .....</b>	<b>119 614</b>	<b>37 169</b>	<b>32 900</b>	<b>21 753</b>	<b>15 303</b>	<b>7 817</b>	<b>3 468</b>	<b>971</b>	<b>233</b>
<b>County</b>									
Østfold .....	5 183	1 703	1 438	958	623	309	107	39	6
Akershus and Oslo .....	5 235	1 885	1 373	907	600	280	110	59	21
Hedmark .....	11 030	3 638	2 501	1 701	1 368	859	577	303	83
Oppland .....	10 656	3 392	2 928	1 761	1 306	756	357	132	24
Buskerud .....	7 417	1 864	1 761	1 340	1 155	688	453	141	15
Vestfold .....	3 598	1 404	1 128	570	317	129	40	5	5
Telemark .....	6 488	1 523	1 407	1 235	1 064	770	392	82	15
Aust-Agder .....	4 299	996	924	673	663	615	380	47	1
Vest-Agder .....	5 440	1 018	1 454	1 306	1 069	493	97	3	-
Rogaland .....	4 570	1 899	1 328	712	409	179	41	2	-
Hordaland .....	8 712	3 220	2 909	1 637	744	173	26	3	-
Sogn og Fjordane .....	6 168	1 916	1 989	1 254	710	258	31	9	1
Møre og Romsdal .....	8 161	3 010	2 499	1 461	861	282	44	4	-
Sør-Trøndelag .....	7 467	2 015	1 883	1 504	1 238	606	187	22	12
Nord-Trøndelag .....	6 202	1 548	1 436	1 202	985	539	379	82	31
Nordland .....	10 281	3 354	3 006	1 933	1 277	540	137	25	9
Troms Romsa .....	8 178	2 409	2 826	1 568	911	340	108	11	5
Finnmark Finnmarku .....	529	375	110	31	3	1	2	2	5

<sup>1</sup> Property in The Farm Register with at least 25 decares productive forest area. A forest property includes the total productive forest area owned by one owner within a municipality.

Source: Forestry, structural statistics, Statistics Norway.

**6.2. Productive forest area<sup>1</sup>, by county and size class in decares. 2008**

County	Total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1 000-1 999	2 000-4 999	5 000-19 999	> 20 000
<b>The whole country .....</b>	<b>69 022 409</b>	<b>2 078 278</b>	<b>5 307 950</b>	<b>7 647 696</b>	<b>10 599 955</b>	<b>10 693 520</b>	<b>10 177 454</b>	<b>8 502 016</b>	<b>14 015 540</b>
<b>County</b>									
Østfold .....	2 401 964	97 094	232 504	336 656	433 346	427 645	343 569	346 623	184 527
Akershus and Oslo .....	3 378 895	105 405	221 135	320 991	411 932	388 012	341 192	515 888	1 074 340
Hedmark .....	12 996 663	195 245	402 701	601 832	961 043	1 191 039	1 751 122	2 870 018	5 023 663
Oppland .....	6 581 569	193 735	471 417	619 939	920 235	1 044 666	1 073 356	1 114 087	1 144 134
Buskerud .....	5 740 283	106 174	284 489	475 884	815 867	960 737	1 368 180	1 124 131	604 821
Vestfold .....	1 430 782	79 881	183 516	200 070	216 555	173 870	114 071	59 421	403 398
Telemark .....	5 172 359	84 687	229 536	444 728	751 777	1 086 660	1 127 232	672 849	774 890
Aust-Agder .....	3 301 115	56 031	146 521	237 914	476 178	865 274	1 109 125	359 599	50 473
Vest-Agder .....	2 428 954	58 376	235 094	459 338	736 108	655 796	259 249	24 993	-
Rogaland .....	1 212 724	101 911	217 067	249 114	283 603	239 573	108 841	12 615	-
Hordaland .....	2 015 522	180 190	469 817	560 223	497 357	219 307	65 946	22 682	-
Sogn og Fjordane .....	1 852 937	107 947	314 366	433 597	478 039	336 170	77 895	84 923	20 000
Møre og Romsdal .....	2 184 954	168 544	400 224	509 255	587 954	367 452	116 652	34 873	-
Sør-Trøndelag .....	3 793 021	115 718	310 399	538 564	851 088	818 249	521 869	206 944	430 190
Nord-Trøndelag .....	6 316 781	84 908	236 006	427 731	690 664	756 065	1 110 160	707 312	2 303 935
Nordland .....	4 351 179	185 355	484 206	675 155	868 211	709 728	375 984	211 097	841 443
Troms Romsa .....	2 969 720	138 099	452 723	547 078	618 019	452 277	306 578	105 198	349 748
Finnmark Finnmarku .....	892 987	18 978	16 229	9 627	1 979	1 000	6 433	28 763	809 978

<sup>1</sup> Includes properties in The Farm Register with at least 25 decares productive forest area.

Source: Forestry, structural statistics, Statistics Norway.

**6.3. Forest properties<sup>1</sup> in combination with agricultural holding, by county and size of productive forest area. 2008**

County	With agricultural holding in total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1 000-1 999	2 000-4 999	5 000-19 999	> 20 000
<b>The whole country</b> .....	<b>37 519</b>	<b>7 573</b>	<b>9 742</b>	<b>8 159</b>	<b>6 503</b>	<b>3 619</b>	<b>1 553</b>	<b>335</b>	<b>35</b>
<b>County</b>									
Østfold .....	2 305	501	662	510	363	182	63	22	2
Akershus and Oslo .....	2 071	506	552	457	329	151	54	18	4
Hedmark .....	3 147	552	670	609	570	404	236	92	14
Oppland .....	4 341	836	1 100	881	764	485	213	58	4
Buskerud .....	2 257	319	455	488	464	278	192	59	2
Vestfold .....	1 472	406	491	299	174	76	25	-	1
Telemark .....	1 442	217	237	282	290	260	129	23	4
Aust-Agder .....	651	69	104	85	123	142	114	14	-
Vest-Agder .....	988	102	180	233	254	187	30	2	-
Rogaland .....	2 231	790	666	398	245	111	21	-	-
Hordaland .....	2 780	682	971	689	347	79	11	1	-
Sogn og Fjordane .....	2 691	602	883	643	398	142	18	4	1
Møre og Romsdal .....	2 436	494	770	574	428	145	24	1	-
Sør-Trøndelag .....	2 703	387	558	641	627	375	109	5	1
Nord-Trøndelag .....	2 936	490	637	665	550	325	236	32	1
Nordland .....	1 884	423	468	403	358	186	42	3	1
Troms Romsa .....	1 080	141	304	289	218	91	36	1	-
Finnmark Finnmarkku .....	104	56	34	13	1	-	-	-	-

<sup>1</sup> Property in The Farm Register with at least 25 decares productive forest area. A forest property includes the total productive forest area owned by one owner within a municipality.

Source: Forestry, structural statistics, Statistics Norway.

**6.4. Forest owners by type of owner, county and property size. 2008**

County	Forest owners in total	Individual forest owners		Unpersonal forest owners	Properties of persons deceased	Unidentified owner
		Males	Females			
<b>The whole country</b> .....	<b>119 614</b>	<b>84 874</b>	<b>27 942</b>	<b>1 950</b>	<b>2 962</b>	<b>1 886</b>
<b>County</b>						
Østfold .....	5 183	3 689	1 193	146	76	79
Akershus and Oslo .....	5 235	3 585	1 188	203	93	166
Hedmark .....	11 030	7 562	2 756	199	275	238
Oppland .....	10 656	7 746	2 381	117	188	224
Buskerud .....	7 417	5 171	1 784	150	201	111
Vestfold .....	3 598	2 644	754	84	54	62
Telemark .....	6 488	4 475	1 598	113	222	80
Aust-Agder .....	4 299	3 116	980	66	98	39
Vest-Agder .....	5 440	3 925	1 236	70	133	76
Rogaland .....	4 570	3 444	867	86	84	89
Hordaland .....	8 712	6 453	1 891	85	179	104
Sogn og Fjordane .....	6 168	4 738	1 183	33	162	52
Møre og Romsdal .....	8 161	6 135	1 708	105	178	35
Sør-Trøndelag .....	7 467	5 578	1 534	102	127	126
Nord-Trøndelag .....	6 202	4 639	1 214	123	73	153
Nordland .....	10 281	6 577	2 984	181	412	127
Troms Romsa .....	8 178	5 075	2 532	72	392	107
Finnmark Finnmarkku .....	529	322	159	15	15	18
<b>Size class by productive forest area in decares</b>						
25- 99 decares .....	37 169	25 205	9 727	490	1 190	557
100- 249 decares .....	32 900	23 419	7 822	342	903	414
250- 499 decares .....	21 753	15 805	4 912	262	466	308
500- 999 decares .....	15 303	11 438	3 127	261	238	239
1 000- 1 999 decares .....	7 817	5 857	1 537	184	104	135
2 000- 4 999 decares .....	3 468	2 495	654	164	47	108
5 000-19 999 decares .....	971	596	149	135	12	79
20 000 - decares .....	233	59	14	112	2	46

Source: Forestry, structural statistics, Statistics Norway.

**6.5. Average incomes<sup>1</sup>, debt, gross property and assessed taxes for personal forest owners with positive entrepreneurial income from forestry<sup>1</sup>. By county, size of productive forest area, sex and age. 2007. NOK**

	Forest owners with positive entrepreneurial income from forestry	Gross income, total <sup>2</sup>	Debt	Gross property	Assessed tax	Personal wages and pensions	Wages and salaries	Total entrepreneurial income	Entrepreneurial income forestry <sup>3</sup>	Entrepreneurial income agriculture <sup>4</sup>	Other income
<b>The whole country ....</b>	<b>25 391</b>	<b>453 000</b>	<b>1 060 000</b>	<b>2 333 000</b>	<b>116 000</b>	<b>218 000</b>	<b>178 000</b>	<b>182 000</b>	<b>34 000</b>	<b>92 000</b>	<b>52 000</b>
<b>County</b>											
Østfold .....	1 992	495 000	1 322 000	2 650 000	128 000	240 000	196 000	198 000	32 000	101 000	54 000
Akershus and Oslo .....	2 144	612 000	1 350 000	4 874 000	191 000	297 000	247 000	198 000	44 000	80 000	112 000
Hedmark .....	3 390	457 000	1 271 000	2 329 000	112 000	214 000	167 000	198 000	57 000	97 000	44 000
Oppland .....	3 363	417 000	947 000	2 067 000	101 000	192 000	158 000	180 000	33 000	92 000	45 000
Buskerud .....	2 555	484 000	1 077 000	2 562 000	131 000	232 000	192 000	182 000	42 000	68 000	68 000
Vestfold .....	1 342	525 000	1 324 000	2 998 000	143 000	249 000	211 000	203 000	37 000	95 000	72 000
Telemark .....	1 597	428 000	715 000	1 816 000	111 000	254 000	197 000	127 000	30 000	46 000	47 000
Aust-Agder .....	951	408 000	691 000	1 472 000	105 000	247 000	193 000	120 000	32 000	44 000	40 000
Vest-Agder .....	772	426 000	841 000	1 590 000	106 000	242 000	188 000	136 000	20 000	58 000	47 000
Rogaland .....	329	441 000	1 242 000	1 958 000	105 000	185 000	160 000	212 000	20 000	134 000	42 000
Hordaland .....	706	388 000	778 000	1 552 000	92 000	198 000	170 000	149 000	15 000	90 000	39 000
Sogn og Fjordane .....	655	380 000	759 000	1 825 000	88 000	187 000	164 000	153 000	10 000	99 000	39 000
Møre og Romsdal .....	695	374 000	883 000	1 724 000	84 000	154 000	128 000	190 000	18 000	116 000	29 000
Sør-Trøndelag .....	1 917	398 000	803 000	1 630 000	93 000	183 000	150 000	174 000	21 000	109 000	40 000
Nord-Trøndelag .....	2 504	419 000	1 170 000	1 868 000	94 000	170 000	146 000	215 000	24 000	139 000	34 000
Nordland .....	453	351 000	816 000	1 316 000	73 000	156 000	119 000	168 000	22 000	115 000	26 000
Troms Romsa .....	25	360 000	632 000	1 396 000	76 000	203 000	160 000	139 000	28 000	101 000	17 000
Finmark Finnmarku ...	1	:	:	:	:	:	:	:	:	:	:
<b>Productive forest area</b>											
25- 99 decares.	2 684	423 000	925 000	1 889 000	107 000	242 000	191 000	139 000	16 000	74 000	41 000
100 - 249 decares.	5 653	433 000	951 000	1 880 000	108 000	232 000	190 000	153 000	19 000	84 000	47 000
250 - 499 decares.	5 754	440 000	991 000	1 998 000	109 000	214 000	175 000	176 000	21 000	98 000	50 000
500 - 999 decares.	5 405	435 000	1 039 000	2 121 000	107 000	203 000	165 000	186 000	30 000	102 000	44 000
1 000 - 1 999 decares.	3 554	475 000	1 119 000	3 214 000	130 000	212 000	176 000	198 000	47 000	95 000	63 000
2 000 - 4 999 decares.	1 803	505 000	1 208 000	2 795 000	137 000	199 000	165 000	247 000	78 000	94 000	58 000
5 000 - 19 999 decares	495	695 000	2 279 000	4 543 000	188 000	222 000	184 000	345 000	181 000	84 000	125 000
20 000- .....	43	2 011 000	10 768 000	43 509 000	642 000	376 000	352 000	739 000	542 000	71 000	807 000
<b>Age</b>											
Below 30 years .....	432	402 000	1 698 000	1 587 000	81 000	199 000	198 000	185 000	50 000	74 000	18 000
30-39 years .....	3 235	463 000	1 702 000	1 938 000	103 000	230 000	228 000	209 000	40 000	105 000	24 000
40-49 years .....	6 961	492 000	1 364 000	2 196 000	122 000	224 000	220 000	217 000	36 000	110 000	50 000
50-59 years .....	7 457	483 000	1 041 000	2 522 000	130 000	224 000	211 000	200 000	33 000	104 000	56 000
60-69 years .....	5 000	409 000	586 000	2 776 000	113 000	199 000	115 000	146 000	29 000	76 000	63 000
70 years and above ....	2 306	329 000	215 000	1 874 000	77 000	204 000	6 000	55 000	28 000	18 000	69 000
<b>Sex</b>											
Males .....	21 337	467 000	1 125 000	2 425 000	120 000	217 000	179 000	195 000	33 000	100 000	54 000
Females .....	4 054	377 000	720 000	1 853 000	92 000	220 000	174 000	111 000	37 000	49 000	45 000

<sup>1</sup> The statistics are based on data from tax statistics for personal taxpayers. <sup>2</sup> Gross income is total wages, salaries, pensions, entrepreneurial income and property income before deductions. <sup>3</sup> Entrepreneurial income from forestry also comprises income from primary industries in other municipalities. <sup>4</sup> Entrepreneurial income from agriculture also comprises sickness benefit from primary industries.

Source: Forestry, structural statistics, Statistics Norway.



**6.6. Income<sup>1</sup>, debt, net property and assessed taxes for personal forest owners with at least 25 decares productive forest area.  
By county, size of productive forest area, sex and age. 2007. NOK 1 000.**

	Forest owners	Gross income, total <sup>2</sup>	Debt	Gross property	Assessed tax	Personal wages and pensions	Wages and salaries	Total entrepreneurial income	Entrepreneurial income forestry <sup>3</sup>	Entrepreneurial income agriculture <sup>4</sup>	Other income
<b>The whole country</b> .....	<b>109 302 45 702 243 82 936 689 201 506 197 11 706 260 28 674 318 21 288 485 10 045 914 858 663 4 885 143 6 831 888</b>										
Østfold .....	4 834	2 213 820	5 239 745	11 036 639	581 049	1 253 986	966 174	651 100	63 572	303 816	296 504
Akershus and Oslo .....	8 454	5 971 202	10 831 730	38 429 006	1 728 543	3 008 787	2 312 490	883 289	94 262	282 327	2 034 674
Hedmark .....	9 045	3 479 883	7 947 837	15 118 861	837 606	2 112 430	1 525 802	996 086	193 184	485 259	362 346
Oppland .....	9 207	3 397 344	6 666 546	14 275 341	814 566	2 036 744	1 561 712	1 021 721	109 955	504 345	332 176
Buskerud .....	6 709	3 190 047	5 963 873	21 862 208	909 239	1 821 282	1 427 917	815 664	108 472	275 226	542 270
Vestfold .....	3 612	1 831 781	4 172 231	9 034 646	501 625	1 030 574	817 200	468 060	49 354	209 214	325 372
Telemark .....	5 390	2 169 221	3 343 699	8 578 834	570 923	1 536 804	1 175 543	402 543	48 596	128 383	220 229
Aust-Agder .....	3 519	1 409 000	2 234 087	5 940 292	370 256	1 003 558	752 798	221 206	30 823	65 335	177 693
Vest-Agder .....	4 760	1 912 506	3 051 233	7 549 870	496 805	1 356 889	969 796	258 810	15 083	82 961	293 308
Rogaland .....	4 446	2 091 658	4 208 478	8 129 598	552 490	1 198 147	929 788	554 532	6 645	350 640	331 951
Hordaland .....	7 819	3 284 809	4 693 994	10 353 898	869 724	2 342 214	1 794 959	477 788	10 333	223 909	459 213
Sogn og Fjordane .....	5 330	1 906 844	3 131 527	7 768 751	460 151	1 250 145	953 790	461 138	6 380	274 203	191 969
Møre og Romsdal .....	7 538	2 964 301	4 471 013	10 821 326	745 868	1 944 022	1 461 946	601 977	12 426	333 295	410 656
Sør-Trøndelag .....	7 041	2 678 864	4 723 838	9 725 975	653 805	1 730 104	1 295 486	648 499	39 321	390 975	294 261
Nord-Trøndelag .....	5 640	2 189 497	5 093 020	8 302 218	501 233	1 211 118	949 542	779 628	59 666	495 155	195 524
Nordland .....	8 594	2 690 722	3 994 063	7 828 659	599 647	2 022 570	1 251 067	480 638	9 884	303 130	184 551
Troms .....	6 827	2 140 719	2 892 282	6 263 655	475 939	1 678 371	1 051 747	294 146	:	159 383	165 125
Romsa .....	537	180 026	277 492	486 419	36 792	136 571	90 730	29 089	:	17 587	14 066
Finnmark .....											
Finnmárku .....											
<b>Productive forest area</b>											
25-99 decares .....	33 038	12 782 061	20 462 014	52 267 468	3 315 195	9 176 905	6 555 914	2 003 290	43 767	881 858	1 569 345
100 - 249 decares .....	30 424	11 979 004	20 714 984	44 595 407	3 021 174	8 094 607	5 975 238	2 464 099	106 917	1 256 829	1 393 969
250 - 499 decares .....	20 426	8 349 086	15 536 834	34 825 451	2 116 462	5 153 701	3 868 128	2 068 720	123 413	1 093 547	1 104 571
500 - 999 decares .....	14 197	6 553 509	12 617 240	29 032 349	1 641 939	3 461 593	2 661 060	1 698 293	164 463	902 331	1 369 192
1 000 - 1 999 decares .....	7 324	3 556 525	7 589 796	21 826 546	958 477	1 824 564	1 445 359	993 509	166 732	474 067	721 719
2 000 - 4 999 decares .....	3 099	1 854 010	3 851 946	10 321 442	457 180	765 139	621 444	566 037	140 671	222 948	512 500
5 000 - 19 999 decares .....	727	492 333	1 562 979	4 854 548	145 583	174 465	140 779	203 154	89 403	50 096	107 060
20 000 decares and more .....	67	135 715	600 896	3 782 986	50 250	23 344	20 562	48 814	23 296	3 466	53 532
<b>Age</b>											
<b>Below</b>											
30 years .....	1 939	686 736	2 473 965	2 282 040	144 123	453 342	448 425	188 763	21 710	87 193	43 671
30-39 years .....	11 398	4 964 488	15 971 590	17 080 733	1 164 475	3 186 415	3 152 709	1 460 555	129 704	742 139	307 639
40-49 years .....	22 696	11 577 150	25 902 307	44 541 443	3 005 272	6 591 675	6 429 060	3 109 802	253 839	1 555 889	1 849 362
50-59 years .....	28 503	13 756 444	25 104 227	58 261 050	3 746 043	8 382 266	7 807 777	3 302 011	246 704	1 577 045	2 019 413
60-69 years .....	24 629	9 468 557	10 919 845	45 832 589	2 489 052	6 190 127	3 343 036	1 691 428	142 599	820 702	1 548 905
70 years and older .....	20 137	5 248 868	2 564 755	33 508 342	1 157 295	3 870 494	107 478	293 355	64 108	102 175	1 062 899
<b>Sex</b>											
Male .....	82 909	37 937 372	72 546 302	173 581 416	9 945 329	22 781 490	17 322 807	9 098 775	707 109	4 428 369	5 929 202
Female .....	26 393	7 764 871	10 390 387	27 924 781	1 760 931	5 892 828	3 965 678	947 140	151 554	456 774	902 686

<sup>1</sup> The statistics are based on data from the registers of tax returns and assessed taxes. <sup>2</sup> Gross income is total wages, salaries, pensions, entrepreneurial income and property income before deductions. <sup>3</sup> Entrepreneurial income from forestry also comprises income from primary industries in other municipalities. <sup>4</sup> Entrepreneurial income from agriculture also comprises sickness benefit from primary industries.  
Source: Forestry, structural statistics, Statistics Norway.

**6.7. Productive forest area, by where the forest area of personal forest owners are situated. 2007. Decares**

	In the municipality of residence	In another municipality	In another municipality, per cent
<b>The whole country</b> .....	<b>42 699 872</b>	<b>9 724 098</b>	<b>19</b>
<b>County</b>			
Østfold .....	1 752 771	358 028	17
Akershus .....	1 713 192	1 618 235	49
Oslo .....	7 930	1 422 613	99
Hedmark .....	6 436 735	913 264	12
Oppland .....	4 336 422	368 351	8
Buskerud .....	3 955 534	724 565	15
Vestfold .....	921 790	659 175	42
Telemark .....	3 336 294	537 138	14
Aust-Agder .....	2 412 407	353 078	13
Vest-Agder .....	1 788 940	501 892	22
Rogaland .....	976 665	277 631	22
Hordaland .....	1 525 235	303 918	17
Sogn og Fjordane .....	1 567 518	134 649	8
Møre og Romsdal .....	1 828 864	214 634	11
Sør-Trøndelag .....	2 777 369	352 869	11
Nord-Trøndelag .....	2 899 391	249 853	8
Nordland .....	2 559 912	414 736	14
Troms Romsa .....	1 863 476	292 948	14
Finmark Finnmarku .....	39 427	26 521	40

Source: Forestry, structural statistics, Statistics Norway.

**6.8. Forest properties with commercial roundwood removals<sup>1</sup>, by county and size of property. 2008**

	In total	Size class by productive forest area in decares							
		25-99	100-249	250-499	500-999	1 000- 1 999	2 000- 4 999	5 000- 19 999	> 20 000
<b>The whole country</b>									
2005 .....	15 264	1 237	2 477	2 940	3 326	2 721	1 736	646	181
2006 .....	15 100	1 175	2 410	3 222	3 226	2 605	1 655	635	172
2007 .....	16 360	1 565	2 790	3 162	3 443	2 784	1 775	659	182
2008 .....	15 376	1 427	2 596	2 974	3 289	2 551	1 716	645	178
<b>County</b>									
Østfold .....	961	93	179	216	212	147	79	29	6
Akershus and Oslo .....	904	93	180	196	186	125	63	43	18
Hedmark .....	2 575	372	425	380	417	366	329	216	70
Oppland .....	1 978	204	319	402	388	321	224	98	22
Buskerud .....	1 791	126	247	299	411	318	267	112	11
Vestfold .....	802	115	263	188	132	66	32	3	3
Telemark .....	1 183	65	133	210	267	254	186	57	11
Aust-Agder .....	761	28	60	108	150	208	183	24	-
Vest-Agder .....	592	23	90	131	192	121	34	1	-
Rogaland .....	180	36	38	39	27	32	8	-	-
Hordaland .....	315	43	100	86	66	18	-	2	-
Sogn og Fjordane .....	358	47	122	96	66	24	1	2	-
Møre og Romsdal .....	430	35	74	112	117	78	14	-	-
Sør-Trøndelag .....	955	63	127	195	276	198	80	8	8
Nord-Trøndelag .....	1 171	71	168	239	252	194	182	43	22
Nordland .....	402	13	71	76	124	75	31	6	6
Troms Romsa .....	18	-	-	1	6	6	3	1	1
Finmark Finnmarku .....	-	-	-	-	-	-	-	-	-

<sup>1</sup> The figures are given by the Register of Timber Trade and Diverted Trust Fund (VSOP).

## 7. Aggregate account of forestry, logging and related service activities

### 7.1. Introduction and history

The aggregate account of forestry provide a summarised description of the forest sectors contribute at the national economy. In 1952, the first aggregate account of forestry was published for the period 1930-1939 and 1946-1951.

Aggregate account of forestry, logging and related service activities is revised back to 2000. It is emphasised doing this revision by the guideline of National Account. Due to this, the value of the net annual increment and the value of logging and related service activities are defined as output in the account. Nevertheless, there are still some discrepancies from the value added for primary forestry in National Account.

### 7.2. Users and applications

Some results from the aggregate account of forestry are used by the Division for National Accounts. The statistics are used by public agencies (Ministries, County Departments), forest owner's organisations and research institutes. .

### 7.3. Population and publishing

The coverage of the aggregate accounts is defined by international guidelines in the System of National Accounts 1993 (1993 SNA).

The figures are published annually.

### 7.4. Data sources and collection of data

The calculation of the forest accounts are based on official forestry statistics and in addition calculations by the division of National Accounts in Statistics Norway.

The forest accounts are mainly based on statistics collected by the Division of primary industry statistics and calculations by the Division of National Accounts in Statistics Norway. To some extent data produced by external suppliers are used.

### 7.5. Sampling

In some areas, the statistics have to be adjusted in order to satisfy the requirements of the national accounts. In areas where the statistics are incomplete, evaluations are essential. In the process of estimating (see 7.6), figures are critically evaluated and controlled in several steps.

### 7.6. Control and revision

The process of compiling the annual forest accounts starts with the calculation of independent supply and demand estimates for all goods and services at current prices. Other parts of the aggregated forest accounts are based on more complex calculations, based on different statistical sources and/or assessments.

The hunting value is defined as the meat/flesh value for the following game: moose, red deer, roe deer, capercaillie, black grouse, hazel grouse, wood pigeon, hare, beaver, woodcock and snipe.

The value of the felled cervids is estimated, based on number of felled animals, average carcass weights and average price per kilo. The average price per kilo is estimated and exclusive VAT. This price will be adjusted with the consumer price index yearly. The Foundation for Nature Research (NINA) is providing average carcass weights. The value of the felled small game is estimated, based on felled

animals and average price per animal. For all felled moose, red deer and wild reindeer the forest owner have to pay a felling fee. This felling fee is the direct cost for cervid hunting. For roe deer and small game hunting there are not calculated any costs.

The production value of forestry related service activities are summarized, and comprises forest management plans, forest plants, timber scaling and services delivered by forest contractors.

### 7.7. Confidentiality

§ 2-6 of the Statistics Act states that data under no circumstances shall be published in such a way that they may be traced back to the supplier. This means that the general rule is not to publish data if there are fewer than three enterprises in an industry.

### 7.8. Concepts, variables and classifications

*Definition of the concepts and variables*

*Output:* Value of goods and services from domestic production activities, i.e. from market production, production for own final use, and non-market production in general government and in NPISHs. Output of goods and services is not the same as sale of goods and services. Output is published in basic prices, i.e. subsidies on products are included, but not VAT or other taxes on products (see basic value). In general government and other non-market production, output is estimated as total of compensation of employees, net taxes on production, consumption of fixed capital and intermediate consumption.

*Value added* and gross income generated from domestic production in an industry or sector (or in total for all industries/sectors), derived and defined as output less intermediate consumption. Value added is published in basic prices, i.e. subsidies on products are included, whereas VAT and other taxes on products are not (see basic price).

In general government and other non-market activities, value added is compiled as sum of compensation of employees, net taxes on production (taxes on production less subsidies on production) and consumption of fixed capital.

*Basic value:* Value of products in basic prices. Basic price is amount receivable by the producer from the purchaser for a unit of a good or service produced as output minus any tax payable to government, and plus any subsidy receivable from government, on that unit as a consequence of its production or sale. Output is recorded in basic prices in accordance with SNA 1993 and ENS 1995. Intermediate consumption is recorded in purchasers' prices. Value added by industry is recorded in basic prices, as a difference between output in basic prices and intermediate consumption in purchasers' prices.

*Consumption of fixed capital:* Decline in the current value of the stocks of fixed capital as a result of physical deterioration, normal obsolescence and normal accidental damage.

*Compensation of employees:* Compensation of employees is wages and salaries plus employers' social contributions.

*Wages and salaries:* Remuneration to employees in respect of work done in domestic production. Wages and salaries are both in cash and in kind. Wages and salaries in cash include pay for overtime, and sickness and maternity allowances paid by employers. Wages and salaries in kind consist of goods and services, or other benefits, provided free or at reduced prices by employers that can be used by employees at their own discretion. Wages and salaries in kind include, inter alia, the services of vehicles, value of the interest forgone by employers when they

provide loans to employees at reduced rates of interest, and free transportation for employees in some transport industries. Wages and salaries subsequently are distributed to households and to rest-of-the world (i.e. for non-residents employed with resident producers, inter alia, foreigners on Norwegian ships).

*Other taxes on production:* Taxes - except taxes on products - that resident producers incur, and that are payable to general government, as a result of engaging in production, and which are not payable per unit of goods and services. Most important among other taxes on production are those allied to oil and gas extraction (royalty excise on extraction of petroleum etc).

*Other subsidies on production:* Subsidies - except subsidies on products - that resident producers may receive from general government, as a result of engaging in production, and which are not payable per unit of goods and services. Most important among other subsidies on production are those allied to agriculture.

*Operating surplus:* Operating surplus in an industry is defined as: = Value added – Compensation of employees – Other taxes on production + Other subsidies on production – Consumption of fixed capital.

*Current prices:* Transactions valued at the actual price agreed upon by the transactors.

*Constant prices:* Time series of national accounts estimates should be presented in prices of a certain reference year (transactions measured in constant prices). This is made by establishing links from the value of the reference year using the annual percentage change in volume from one year to next in each case. The change from one year to next is thus the same in the chained time series as in the series being based on previous year as base year. Chaining (establishing links) is carried out both at detailed and aggregated levels. That means chaining destroys additivity in the tables, i.e. the components in the table (the detailed estimates) fail to add to aggregates in later periods. Additivity is achieved only when constant-price estimates are in prices of the base year.

*SNA:* System of National Accounts - International standard for national accounts. SNA 1993, the present and latest version of this standard, is prepared under the joint responsibility of United Nations, OECD, IMF, World Bank and EU/Eurostat

*ESA/ENS:* European System of National and Regional Accounts.

*ESA 1995:* This is the international standard that relates to the preparation of national accounts in EU/EEA countries, in effect from 1999. The European System of National Accounts ENS 1995 is the Norwegian term (Norwegian translation of ESA1995, published by Statistics Norway in Official Statistics of Norway C 522). ENS 1995 is based on same definitions as SNA 1993, while presenting the guidelines in an alternative way. Norway is obliged to follow ENS 1995 as part of the cooperation within EEA, and the first estimates according to these guidelines were published in 1995.

For further information about [Concepts and definition in national accounts](#).

#### *Standard classifications*

The accounting system of the Norwegian national accounts is based on the international standards for national accounts, i.e. 1993 SNA and ESA95. The accounting system outlines the framework and contents for the production of national accounts statistics. In addition to accounting structure, the accounting system contains a number of groupings or classifications used in the national accounts, of which the most important are described below:

*Activity classification* The activity classification used in the national accounts is based on the Norwegian [Standard Industrial Classification \(SIC2002\)](#), which is

based on the EU standard adopted for ESA 1995, i.e. NACE Rev.1. At aggregated level, the European standard is identical with ISIC Rev.3, which is the common international standard.

## 7.9. Sources of error and uncertainty

### *Measurement and processing errors*

The aggregated forest accounts are based on various statistical sources, calculations and estimates and the results reflect the inaccuracy in the statistical sources and the methods of compilation.

## 7.10. Comparability and coherence

### *Comparability over time and space*

Comparable figures for annual national accounts are available back to 1998. For the years 1930-1939 and 1947-1997 the data are based on the previous national and international guidelines.

### *Coherence with other statistics*

The value added from the forestry are also published by the [Division for National Accounts](#).

## 7.11. Main results

In 2007, the value added in primary forestry is estimated to NOK 5.4 billion, an increase of 1.1 billion from 2006.

The value added is defined as output less intermediate consumption. The rise in the value added was due to both gained quantity of timber sold and raised average timber prices in 2007. The aggregated gross value of the roundwood sold to the manufacturing industry rose by NOK 761 million from 2006 to 2007.

In 2007, the primary forestry delivered forest products amounting to NOK 5.8 billion. The aggregated gross value of industrial roundwood totalled NOK 3.1 billion. The volume of the growing stock increases annually and the value of the net annual increment from 2006 to 2007 are estimated to NOK 1.7 billion. In addition, harvested fuel wood for sale and consume on farms amounted to NOK 311 million.

The primary forestry purchased goods and services from forestry related service industries for a total of NOK 1.1 billion in 2007. Services delivered by forest contractors amounted to NOK 950 million.

The meat value of felled game defined as part of forestry is estimated to NOK 463 million in 2007. The value of the moose hunting is estimated to NOK 300 million.

## 7.12. Availability

All [forest statistics](#) and [national accounts statistics](#) are available on theme pages.

### *More tables in StatBank*

[07085: Agregate account of forestry, logging and related service activities \(Mill. NOK\) \(2000 - 2007\)](#)

**7.1. Aggregate account of forestry, logging and related service activities. 2000 - 2007\*. NOK million**

Forest products delivered during the year	2000	2001	2002	2003	2004	2005	2006	2007*
Timber and cordwood for sale .....	2 408	2 515	2 184	2 015	2 245	2 829	2 318	3 079
Timber consumed on farms .....	55	55	50	37	38	40	40	48
Fuelwood for sale and consum on farms .....	246	241	273	335	321	311	347	311
Christmas trees and part of plants for ornamental purposes .....	159	163	166	170	170	173	177	179
Hunting .....	399	402	414	433	422	424	431	463
Net annual increment .....	1 798	1 927	1 986	2 118	2 319	1 236	1 457	1 684
Forest products, total .....	5 063	5 304	5 073	5 107	5 517	5 012	4 771	5 763
Services related to forestry .....	915	914	888	826	962	1 061	960	1 079
Investment work carried out by use of own production factors								
Forest regeneration work .....	100	96	84	55	54	51	58	65
Construction of forest roads .....	23	21	26	21	17	14	12	12
Total .....	123	117	110	76	71	64	70	77
Income, total .....	6 101	6 335	6 071	6 009	6 549	6 137	5 801	6 919
Expenditure								
Hiring of machinery from farming .....	33	32	28	25	24	26	22	26
Other goods and services .....	130	135	114	106	69	76	72	95
Repair and maintenance work .....	284	266	262	219	288	344	338	360
Services related to forestry .....	873	868	849	791	927	1 023	923	1 045
Felling licence fee, cervids .....	23	17	17	17	16	17	19	19
Expenditure, total .....	1 343	1 318	1 271	1 158	1 326	1 485	1 374	1 545
Value added in forestry .....	4 759	5 016	4 800	4 851	5 224	4 652	4 256	5 374
Consumption of fixed capital .....	691	723	740	745	799	848	892	920
Other subsidies on production .....	128	119	134	135	123	147	180	167
Other taxes on production .....	0	0	0	0	0	0	0	0
Labour cost .....	779	688	787	750	797	817	830	885
Operating surplus of forestry .....	3 417	3 724	3 407	3 491	3 751	3 134	2 714	3 735

Source: Aggregate account of forestry, logging and related service activities, Statistics Norway.

## 8. Sample Survey of Forestry, 2008

The yearly survey of agriculture and forestry is intended to obtain relevant data not found in administrative data systems. The main topics differ from one year to another. In 2008, the main topic was forestry.

### 8.1. Purpose and history

The purpose of the Sample Survey of Forestry is to obtain relevant data not found in administrative data systems, and to obtain data for units not covered by administrative systems.

The Sample Survey of Forestry is one of several data sources which together complete a picture of the agricultural and forestry industry in Norway. The themes in the survey vary from year to year. Forestry was main topic in 2000, 2004 and 2008.

### 8.2. Users and applications

Data from the survey are used by professional organizations, the Ministry of Agriculture and Food, the Ministry of Environment, various research institutions such as the Norwegian Agricultural Economics Research Institute and the Division for Environmental Statistics at Statistics Norway.

### 8.3. Statistics production

The population is properties registered in the administrative Farm Register of the Norwegian Agricultural Authority. In 2008, the survey comprised forest properties with at least 100 decares of productive forest area. In 2000 and 2004, the threshold was 25 decares of productive forest area.

### 8.4. Data sources and collection of data

The majority of the data comes directly from respondents who fill in forms for the survey. The Farm Register provides basic information on the size of the agricultural and forest area, persons associated with the property/holding and what their association is with the property/holding. Some information about persons associated with the property are also provided from the Norwegian Cadastre System 2007 ("Matrikkelen").

Forms are sent to the properties drawn for inclusion in the survey. The owner of the property provides the data.

### 8.5. Sampling

A sample is drawn from the Farm Register for the Survey of Forestry. In 2008 the sample included 9.418 forest properties, stratified by size of productive forest area and county.

### 8.6. Control and revision

A number of controls and corrections are done to ensure consistency both within a single form and between forms and available register information. During this work, the local agriculture offices are contacted to clear up various lacks and ambiguities.

### 8.7. Confidentiality

Any statistics based on three respondents or less are not published.



## 8.8. Estimation

The Sample Survey of Forestry 2008 is based on a classification of the population of properties with at least 100 decares productive forest area into 8 size classes of productive forest area. In each stratum a drawing probability (percentage) is decided. The drawing per cent is increased in strata with few properties. On this basis an extrapolation factor is created for each property in the sample. This factor is equal to the ratio between the number of properties in the population and in the sample in each stratum.

## 8.9. Concepts, variables and classifications

### Definition of the concepts and variables

*Agricultural and forestry property:* Property that is used for or could be used for agriculture and/or forestry. All agricultural/forestry area belonging to the same owner within a municipality is regarded as one property, irrespective of the number of cadastral units.

*Productive forest area:* Forest area that under favourable stand conditions has an annual yield capacity per hectare of at least 1 cubic metre of wood including bark.

*Forest property:* Property with at least 25 decares of productive forest area. In the Sample Survey of Forestry 2008 the threshold was 100 decares productive forest area.

*Supplementary industry:* The Sample Survey of Forestry defines supplementary industry as industry that utilise the properties' area and resources in forest and other outfields.

*Gross income:* The sum of all incomes excluded value added tax, and not deducted any costs.

### Standard classifications

Classification of forest properties by size class

## 8.10. Sources of error and uncertainty

### Measurement and processing errors

Primary data are obtained from the forms filled in by the respondents. They may contain errors made by the individual respondents when he or she filled in the form. A number of errors are discovered and corrected during the editing process at Statistics Norway. Errors may also occur during the data processing. Extensive work has been carried out to reduce these errors as much as possible.

### Non-response errors

Non-response in the survey is mainly due to that individual respondents refuse to answer the form. In the Sample survey of Forestry 2004 the non-response rate due to refusal was 6,5 per cent.

Another type of non-response is that a property has been merged with another property and is no longer an independent unit.

## 8.11. Comparability and coherence

### Comparability over time and space

In the years 1971-1989 Statistics Norway worked out separate sample surveys of forestry. The sample used in the period 1971-1979 was drawn from the Census of Forestry 1967. The sample used in the years 1980-1989 was drawn from the Census of Agriculture and Forestry 1979. The Census of Agriculture and Forestry 1979 was the first complete census conducted in Norway that included both agriculture and forestry.

The sample used for the period 1990 - 1998 was common for agriculture and forestry. The sample was drawn from the Census of Agriculture and Forestry 1989.

As from 2000 the sample is drawn from the Farm Register of the Norwegian Agricultural Authority.

*Coherence with other statistics*

Results from the Sample Survey of Forestry 2008 may be compared with official statistics based on registers such as the statistics on Commercial roundwood removals and Silviculture.

### 8.12. Main results

In 2007, 25 per cent of the forest owners were engaged in some kind of supplementary industry in addition to traditional forestry. Selling hunting and fishing rights was the most common additional activity.

In 2007, 20 058 forest properties were engaged in some sort of supplementary industry. In this context, supplementary industry refers to an activity that utilises the properties' resources in the forest and other outlying fields. The most common activities were selling hunting and fishing rights, leasing out sites and renting out cabins. Three in four properties with a productive forest area between 5 000 and 19 999 decares had supplementary industry in 2007, while 92 per cent of the forest properties with at least 20 000 decares of productive forest area had these industries.

In total, the gross income from supplementary industries constituted around NOK 900 million in 2007. In general, there was considerable variation in the size of gross income among the properties. Nearly 85 per cent of the properties had gross income lower than NOK 50 000, whereas 2 per cent had gross income higher than NOK 500 000. On average, the gross income was NOK 45 000 per property with supplementary industry.

### 8.13. Availability

[http://www.ssb.no/english/subjects/10/04/20/skogbruk\\_en/](http://www.ssb.no/english/subjects/10/04/20/skogbruk_en/)

*More tables in Today's statistics*

[Table 1 Removals for sale, by type and method of felling. 2007. Per cent](#)

[Table 2 Labour input by county and size of productive forest area. 2007. Man-hours](#)

[Table 3 Forest area planted or seeded by county and productive forest area. 2007](#)

[Table 4 Forest area with young forest tended, by county and size of productive forest area. 2007](#)

[Table 5 Profitable area as part of productive forest area, by county and productive forest area. 2007. Per cent](#)

[Table 6 Gross income for 2007 in supplementary industries that utilise the properties' area and resources in forest and other outfields. NOK 1 000 exclusive value added tax](#)

*More tables in StatBank*

[07310: Gross income in supplementary industries that utilise the properties area and resources \(C\) \(2007\)](#)

[07074: Removals for sale, \(C\) \(2007\)](#)

[07075: Forest area planted or seeded \(C\) \(2007\)](#)

[07076: Labour input in forestry \(man-hours\). \(C\) \(2007\)](#)

[07077: Forest area with young forest tended \(C\) \(2007\)](#)

[07080: Profitable area as part of productive forest area \(per cent\) \(C\) \(2007\)](#)

8.1. Removals<sup>1</sup> for sale, by type and method of felling, 2007

	Removals for sale, total	Type of felling			Part of felling and delimiting with tree processor
		Final cuts	Thinning	Other kinds of felling	
	m <sup>3</sup>	Per cent			
<b>The whole country</b> .....	<b>7 882 111</b>	<b>85</b>	<b>13</b>	<b>2</b>	<b>91</b>
<b>County</b>					
Østfold .....	497 996	91	8	1	95
Akershus/Oslo .....	557 322	86	13	1	94
Hedmark .....	2 393 425	71	27	2	97
Oppland .....	1 038 962	92	6	2	94
Buskerud .....	947 000	85	12	3	93
Vestfold .....	357 758	95	1	3	91
Telemark .....	599 276	91	8	1	77
Aust-Agder .....	275 019	92	7	1	83
Vest-Agder .....	107 330	99	1	0	82
Rogaland .....	37 464	91	6	2	69
Hordaland .....	63 046	94	0	6	45
Sogn og Fjordane .....	42 822	90	8	2	47
Møre og Romsdal .....	76 648	94	1	5	54
Sør-Trøndelag .....	277 864	98	2	0	94
Nord-Trøndelag .....	457 050	95	4	1	85
Nordland .....	136 665	88	9	3	77
Troms Romsa/Finnmark					
Finnmárku .....	16 464	72	18	10	36
<b>Productive forest area</b>					
- 249 decares .....	742 218	97	1	2	84
250- 499 " .....	989 991	93	7	0	91
500- 999 " .....	1 261 337	89	8	3	88
1 000- 1 999 " .....	1 329 525	88	11	1	87
2 000- 4 999 " .....	1 275 028	85	13	2	91
5 000- 19 999 " .....	1 025 860	75	24	2	95
20 000- " .....	1 258 152	76	22	2	97

<sup>1</sup> Includes properties with at least 100 decares productive forest area.

8.2. Labour input by county and size of productive forest area<sup>1</sup>, 2007. Man-hours

	Total	Forest owner	Spouses/cohabitants	Other workers
<b>The whole country</b> .....	<b>4 227 416</b>	<b>2 702 915</b>	<b>353 343</b>	<b>1 171 159</b>
<b>County</b>				
Østfold .....	217 363	104 256	10 346	102 761
Akershus/Oslo .....	170 687	92 023	11 945	66 719
Hedmark .....	507 151	288 674	46 272	172 206
Oppland .....	373 683	256 723	18 962	97 999
Buskerud .....	350 937	227 403	33 737	89 797
Vestfold .....	152 780	100 475	18 136	34 169
Telemark .....	340 206	230 551	27 401	82 254
Aust-Agder .....	229 721	165 562	14 322	49 837
Vest-Agder .....	189 007	140 058	19 224	29 725
Rogaland .....	131 290	96 316	5 413	29 562
Hordaland .....	182 323	113 668	40 092	28 563
Sogn og Fjordane .....	187 489	124 401	14 561	48 527
Møre og Romsdal .....	195 315	144 804	10 785	39 725
Sør-Trøndelag .....	190 681	124 822	21 674	44 186
Nord-Trøndelag .....	328 633	189 180	21 577	117 877
Nordland .....	291 660	172 099	27 504	92 056
Troms Romsa/Finnmark				
Finnmárku .....	188 490	131 901	11 391	45 198
<b>Productive forest area</b>				
- 249 decares .....	904 579	639 040	94 413	171 125
250- 499 " .....	817 160	574 487	78 556	164 118
500- 999 " .....	858 743	572 308	90 592	195 843
1 000- 1 999 " .....	630 259	455 601	45 643	129 015
2 000- 4 999 " .....	448 066	310 678	28 357	109 031
5 000- 19 999 " .....	221 902	122 686	9 088	90 128
20 000- " .....	346 707	28 115	6 694	311 898

<sup>1</sup> Includes properties with at least 100 decares productive forest area.

**8.3. Forest area planted or seeded by county and productive forest area<sup>1</sup>. 2007**

	Properties with forest area planted or seeded			Forest area planted or seeded, by labour category. Per cent		
	Number of properties	per cent of all properties	Forest area planted or seeded. Decares	Owner and unpaid family members	Hired labour	Contractor or others who undertook the work at a fixed price
2003 .....	8 956	11	190 996	33	26	41
2007 .....	6 893	8	214 263	28	26	46
<b>2007</b>						
Østfold .....	430	13	11 424	33	33	34
Akershus/Oslo .....	382	12	10 946	19	34	47
Hedmark .....	807	11	35 596	11	23	66
Oppland .....	973	13	34 160	34	22	43
Buskerud .....	835	15	27 899	26	30	44
Vestfold .....	353	16	9 938	17	17	66
Telemark .....	602	12	17 772	36	21	43
Aust-Agder .....	274	8	6 864	64	10	26
Vest-Agder .....	152	4	2 796	59	7	34
Rogaland .....	72	3	516	47	43	9
Hordaland .....	112	2	1 391	80	2	18
Sogn og Fjordane .....	69	2	614	46	17	37
Møre og Romsdal .....	112	2	2 718	25	34	41
Sør-Trøndelag .....	535	10	14 031	33	30	37
Nord-Trøndelag .....	836	18	24 131	28	35	37
Nordland .....	282	4	12 553	18	31	50
Troms Romsa/Finnmark Finnmarku	67	1	915	33	25	41
<b>Productive forest area</b>						
- 249 decares .....	818	2	13 891	58	0	42
250- 499 " .....	1 533	7	25 647	42	18	40
500- 999 " .....	1 885	13	46 270	27	18	55
1 000- 1 999 " .....	1 266	16	38 562	37	23	40
2 000- 4 999 " .....	870	26	34 737	30	21	49
5 000- 19 999 " .....	377	41	24 895	12	26	62
20 000- " .....	144	65	30 260	1	67	33

<sup>1</sup> Includes properties with at least 100 decares productive forest area.

**8.4. Forest area with young forest tended, by county and size of productive forest area<sup>1</sup>. 2007**

	Properties <sup>1</sup> with young forest tended			Area with young forest tended, by labour category. Per cent		
	Number of properties	As per cent of all forest properties	Area with young forest tended. Decares	Owner and unpaid family members	Hired labour	Contractor or others who undertook the work at a fixed price
2003 .....	12 748	15	294 966	56	25	18
2007 .....	13 070	16	486 178	43	22	34
<b>2007</b>						
Østfold .....	722	21	30 327	32	30	38
Akershus/Oslo .....	718	22	37 117	33	29	38
Hedmark .....	1 357	18	104 967	21	26	54
Oppland .....	977	13	37 112	35	22	43
Buskerud .....	1 302	23	58 287	36	28	36
Vestfold .....	806	37	22 506	61	14	25
Telemark .....	1 033	21	35 653	52	18	31
Aust-Agder .....	790	24	34 569	56	6	38
Vest-Agder .....	708	17	17 007	72	10	18
Rogaland .....	241	9	7 273	33	7	60
Hordaland .....	435	8	6 894	92	4	4
Sogn og Fjordane .....	388	9	4 543	91	9	0
Møre og Romsdal .....	614	12	14 337	63	17	21
Sør-Trøndelag .....	506	9	13 489	72	20	8
Nord-Trøndelag .....	1 007	22	34 639	55	34	11
Nordland .....	674	10	15 359	55	32	13
Troms/ Finnmark	792	13	12 099	87	5	8
Troms Romsa/Finnmark Finnmarku						
<b>Productive forest area</b>						
- 249 decares .....	3 268	10	52 457	73	6	20
250- 499 " .....	3 232	15	65 714	67	13	21
500- 999 " .....	2 899	19	80 118	56	16	28
1 000- 1 999 " .....	1 785	23	74 800	51	15	33
2 000- 4 999 " .....	1 273	37	83 803	43	20	37
5 000- 19 999 " .....	465	51	66 396	14	29	58
20 000- " .....	146	66	62 890	1	58	41

<sup>1</sup> Includes properties with at least 100 decares productive forest area.

**8.5. Profitable area<sup>1</sup> as part of productive forest area, by county and productive forest area<sup>2</sup>. Per cent. 2007**

	Total	Size classes in decares			
		-249	250-999	1 000-4 999	5 000-
2003 .....	79	68	73	80	85
2007 .....	73	60	68	76	77
<b>2007</b>					
Østfold .....	86	86	84	87	88
Akershus/Oslo .....	88	71	88	88	91
Hedmark .....	89	73	82	87	91
Oppland .....	81	71	76	82	87
Buskerud .....	80	62	79	80	85
Vestfold .....	84	83	85	85	83
Telemark .....	78	71	76	76	88
Aust-Agder .....	74	64	72	77	72
Vest-Agder .....	66	50	68	67	63
Rogaland .....	53	47	53	54	100
Hordaland .....	50	51	52	41	57
Sogn og Fjordane .....	49	46	51	44	66
Møre og Romsdal .....	60	48	59	69	84
Sør-Trøndelag .....	70	57	67	74	71
Nord-Trøndelag .....	57	70	73	76	42
Nordland .....	60	53	58	63	64
Troms Romsa/Finnmark					
Finnmárku .....	47	45	47	61	40

<sup>1</sup> According to forest owners' estimates. <sup>2</sup> Includes properties with at least 100 decares of productive forest area.

**8.6. Gross income for 2007 from supplementary industries that utilise the properties<sup>1</sup> area and resources in forest and other outfields.**

	Properties with gross income in supplementary industries	Proportion of properties with supplementary industry	Gross income exclusive value added tax, NOK 1 000							
			Total	Selling hunting and fishing rights	Accommodation, service, guiding etc. related to hunting and fishing	Renting out cabins	Leasing out sites	Processing own timber for sale	Production of Christmas trees and decorative greenery	Other supplementary industries
<b>The whole country .....</b>	<b>20 058</b>	<b>25</b>	<b>895 946</b>	<b>189 983</b>	<b>28 578</b>	<b>150 877</b>	<b>183 651</b>	<b>62 296</b>	<b>34 359</b>	<b>246 202</b>
<b>County</b>										
Østfold .....	442	13	27 593	4 999	:	1 897	13 235	2 973	:	4 052
Akershus/Oslo .....	1 003	31	40 128	9 449	86	4 461	10 907	2 886	349	11 990
Hedmark .....	2 639	36	127 282	36 778	2 882	13 528	28 029	13 874	248	31 944
Oppland .....	2 190	30	88 667	19 001	249	37 632	18 887	5 383	238	7 278
Buskerud .....	2 113	38	112 028	14 859	1 140	42 062	16 372	3 278	2 787	31 530
Vestfold .....	667	31	30 397	4 785	:	3 307	7 383	1 492	:	12 990
Telemark .....	1 239	25	86 296	7 998	4 325	14 086	12 614	6 823	4 771	35 679
Aust-Agder .....	714	22	29 436	5 308	408	2 516	13 933	1 628	1 716	3 927
Vest-Agder .....	387	9	29 825	2 425	:	3 087	7 176	4 546	10 637	1 796
Rogaland .....	762	29	30 170	3 259	752	3 171	3 180	1 128	10 387	8 293
Hordaland .....	528	10	21 190	1 098	166	1 479	2 610	1 410	603	13 825
Sogn og Fjordane .....	826	20	55 850	10 725	3 456	8 870	876	2 533	433	28 956
Møre og Romsdal .....	1 057	21	50 784	8 079	:	1 980	21 514	2 677	:	15 528
Sør-Trøndelag .....	2 195	40	47 054	19 502	2 855	6 117	8 540	3 361	182	6 497
Nord-Trøndelag .....	2 141	47	74 714	31 886	5 214	4 790	6 964	1 906	486	23 469
Nordland .....	753	11	29 403	6 232	5 429	967	5 987	5 625	172	4 990
Troms Romsa/Finnmark										
Finnmárku .....	399	7	15 130	3 601	:	928	5 444	773	:	3 459
<b>Productive forest area</b>										
- 249 decares .....	5 122	16	115 992	17 499	:	20 727	19 114	:	2 417	55 290
250- 499 " .....	4 378	20	143 261	13 921	:	39 208	53 272	:	14 712	11 547
500- 999 " .....	4 904	33	197 376	27 853	5 796	44 050	23 794	15 011	10 871	70 001
1 000- 1 999 " .....	2 947	38	112 301	26 410	5 792	7 687	19 533	11 634	3 607	37 637
2 000- 4 999 " .....	1 819	54	93 337	24 299	3 305	8 510	14 861	6 107	1 970	34 285
5 000- 19 999 " .....	685	75	67 059	23 267	2 995	9 591	16 573	3 916	378	10 340
20 000- " .....	204	92	166 620	56 733	9 556	21 104	36 503	15 216	405	27 103

<sup>1</sup> Include properties with at least 100 decares productive forest area.