Websites queried

Organization	Site
Agence de l'environnement et de la maîtrise de l'énergie	www.ademe.fr
Agreste: la statistique, l'évaluation et la prospective agricole	www.agreste.agriculture.gouv.fr
CEMAGREF (l'Institut de recherche en sciences et technologies pour l'environnement)	www.cemagref.fr
Centre technique interprofessionnel d'études de la pollution atmosphérique	www.citepa.org
Comité national pour le développement du bois	www.bois-construction.org
Comité des Plantes à Parfum, Aromatiques et Médicinales	www.cpparm.org
Confédération française de l'industrie des papiers, cartons et celluloses	www.copacel.fr
Direction générale de l'énergie et des matières premières	www.industrie.gouv.fr/energie
European Information System on Forest Genetic Resources (EUFGIS)	http://portal.eufgis.org
Fédération nationale des communes forestières de France	www.fncofor.fr
FCBA (Forêt Cellulose Bois-Construction Ameublement)	http://www.fcba.fr
Food and Agriculture Organization of the United Nations – Forestry	www.fao.org/forestry
Forest Europe (Conférence ministérielle pour la protection des forêts en Europe)	www.foresteurope.org
Forest Stewardship Council	www.fsc.org
Forêts de protection	http://agriculture.gouv.fr/les-forets-de-protection,10806
French National Forest Inventory (Inventaire forestier national)	www.ifn.fr
Groupement d'intérêt public Écosystèmes Forestiers	www.gip-ecofor.org
Institut de l'abeille (ITSAP)	www.cnda.asso.fr
Institut méditerranéen du liège (IML)	www.institutduliege.com
Institut national de la statistique et des études économiques	www.insee.fr
Inventaire national du patrimoine naturel	http://inpn.mnhn.fr/isb/accueil/index
Man and Biosphere – France (UNESCO)	www.mab-france.org
Ministère de l'agriculture, de l'alimentation, de la pêche, de la ruralité et de l'aménagement du territoire	www.agriculture.gouv.fr
Ministère de l'écologie, du développement durable des transports et du logement	www.developpement-durable.gouv.fr
Mutualité sociale agricole	www.msa.fr
Observatoire de la forêt méditerranéenne	www.ofme.org
Office national de la chasse et de la faune sauvage	www.oncfs.gouv.fr
Office national des forêts	www.onf.fr
Office national interprofessionnel des plantes à parfum, aromatiques et médicinales	www.onippam.fr
Office statistique des communautés européennes (EUROSTAT)	europa.eu.int/comm/eurostat
Programme for the endorsement of forest certification schemes	
- PEFC International	www.pefc.org
- PEFC France	www.pefc-france.org
Service de l'observation et des statistiques (SOeS)	*http://www.stats.environnement.developpement-durable.gouv.fr/*
Service des nouvelles du marché	www.snm.agriculture.gouv.fr
Union de la coopération forestière française	www.ucff.asso.fr
United Nations Economic Commission for Europe	www.unece.org
World Conservation Union – French Committee	www.uicn.fr
World Heritage Committee (UNESCO)	www.whc.unesco.org
World Wildlife Fund – France	www.wwf.fr

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Appendix I

Administrative region	Department		Dates of field surveys to record data available on 1st January			
			1989	1994	1999	2004
ALSACE	67	BAS-RHIN	1979	1989	1989	2002
	68	HAUT-RHIN	1978	1988	1988	1999
AQUITAINE	24	DORDOGNE	1982	1992	1992	1992
	33	GIRONDE	1977	1987	1987	1998
	40	LANDES	1978	1988	1988	1999
	47	LOT-ET-GARONNE	1979	1989	1989	2000
	64	PYRÉNÉES-ATLANTIQUES	1985	1985	1995	1995
AUVERGNE	3	ALLIER	1987	1987	1987	2001
	15	CANTAL	1977	1989	1989	1989
	43	HAUTE-LOIRE	1979	1991	1991	2002
	63	PUY-DE-DÔME	1976	1988	1988	1988
BASSE-NORMANDIE	14	CALVADOS	1987	1987	1987	2001
	50	MANCHE	1975	1987	1987	2001
	61	ORNE	1975	1988	1988	2001
BOURGOGNE	21	CÔTE-D'OR	1980	1990	1990	1990
	58	NIÈVRE	1985	1985	1996	1996
	71	SAONE-ET-LOIRE	1980	1989	1989	1989
	89	YONNE	1986	1986	1986	1999
BRETAGNE	22	CÔTES-D'ARMOR	1981	1981	1995	1995
	29	FINISTÈRE	1981	1981	1996	1996
	35	ILLE-ET-VILAINE	1980	1980	1995	1995
	56	MORBIHAN	1980	1980	1998	1998
CENTRE	18	CHER	1986	1986	1986	1999
	28	EURE-ET-LOIR	1977	1992	1992	1992
	36	INDRE	1973	1988	1997	1997
	37	INDRE-ET-LOIRE	1985	1985	1985	1999
	41	LOIR-ET-CHER	1982	1982	1982	1998
	45	LOIRET	1979	1979	1992	1992
CHAMPAGNE-ARDENNE	8	ARDENNES	1987	1987	1987	1998
	10	AUBE	1983	1983	1994	1994
	51	MARNE	1986	1986	1986	1997
	52	HAUTE-MARNE	1985	1985	1997	1997
CORSE	2A	CORSE-DU-SUD	1977	1988	1988	1988
	2B	HAUTE-CORSE	1977	1988	1988	1988
FRANCHE-COMTÉ	25	DOUBS	1982	1982	1994	1994
	39	JURA	1980	1980	1992	1992
	70	HAUTE-SAÔNE	1984	1984	1996	1996
	90	TERRITOIRE DE BELFORT	1984	1984	1984	1996
HAUTE-NORMANDIE	27	EURE	1975	1988	1988	2003
	76	SEINE-MARITIME	1976	1989	1989	2002

ÎLE-DE-FRANCE	75	PARIS ET SA ZONE PÉRIPHÉRIQUE	1979	1979	1994	1994
	77	SEINE-ET-MARNE	1978	1978	1993	1993
LANGUEDOC-ROUSSILLON	11	AUDE	1978	1989	1989	1989
	30	GARD	1982	1982	1993	1993
	34	HÉRAULT	1983	1983	1997	1997
	48	LOZÈRE	1979	1979	1992	1992
	66	PYRÉNÉES-ORIENTALES	1980	1991	1991	1991
LIMOUSIN	19	CORRÈZE	1980	1990	1990	2003
	23	CREUSE	1981	1991	1991	1991
	87	HAUTE-VIENNE	1981	1991	1991	1991
LORRAINE	54	MEURTHE-ET-MOSELLE	1980	1990	1990	1990
	55	MEUSE	1980	1980	1991	1991
	57	MOSELLE	1982	1982	1993	1993
	88	VOSGES	1981	1981	1992	1992
MIDI-PYRÉNÉES	9	ARIEGE	1978	1990	1990	1990
	12	AVEYRON	1981	1981	1994	1994
	31	HAUTE-GARONNE	1975	1987	1987	2000
	32	GERS	1979	1989	1989	2001
	46	LOT	1980	1990	1990	2002
	65	HAUTES-PYRÉNÉES	1974	1986	1997	1997
	81	TARN	1979	1992	1992	1992
	82	TARN-ET-GARONNE	1979	1989	1989	2001
NORD-PAS-DE-CALAIS	59	NORD	1986	1986	1986	2000
	62	PAS-DE-CALAIS	1986	1986	1986	2000
PAYS DE LA LOIRE	44	LOIRE-ATLANTIQUE	1985	1985	1985	2000
	49	MAINE-ET-LOIRE	1983	1983	1997	1997
	53	MAYENNE	1983	1983	1983	1999
	72	SARTHE	1984	1984	1984	1999
	85	VENDÉE	1984	1984	1994	1994
PICARDIE	2	AISNE	1977	1991	1991	1991
	60	OISE	1976	1990	1990	2001
	80	SOMME	1976	1989	1989	2002
POITOU-CHARENTES	16	CHARENTE	1983	1983	1993	1993
	17	CHARENTE-MARITIME	1984	1984	1993	1993
	79	DEUX-SÈVRES	1985	1985	1995	1995
	86	VIENNE	1986	1986	1996	1996
PROVENCE-ALPES-CÔTE D'AZUR	4	ALPES-DE-HAUTE-PROVENCE	1984	1984	1984	1999
	5	HAUTES-ALPES	1983	1983	1983	1997
	6	ALPES-MARITIMES	1985	1985	1985	2002
	13	BOUCHES-DU-RHÔNE	1977	1988	1988	1988
	83	VAR	1986	1986	1986	1999
	84	VAUCLUSE	1986	1986	1986	2001
RHÔNE-ALPES	1	AIN	1983	1983	1995	1995
	7	ARDÈCHE	1981	1981	1995	1995
	26	DROME	1982	1982	1996	1996
	38	ISÈRE	1984	1984	1997	1997
	42	LOIRE	1981	1981	1993	1993
	69	RHÔNE	1982	1982	1994	1994
	73	SAVOIE	1985	1985	1985	2000
	74	HAUTE-SAVOIE	1975	1987	1987	1998

Appendix II

Principles of the new NFI inventory method

Since November 2004, the French National Forest Inventory (NFI) has been conducting annual national inventory data collection surveys, with each covering a vegetation period. They begin in the middle of the last quarter of the year (October or November) and continue until the same period the following year.

The NFI method is based on systematic sampling. Each sampling point is attached to a node on a 1 km^2 grid, thus with a 1 km^2 area, set up for a 10 year period throughout metropolitan France. Every year a tenth of the network of nodes, selected so as to form a 10 km^2 grid, is used.

The first survey level corresponds to inventory work carried out yearly by photo-interpretation of the sampling point involving around 80,000 sampling points. Based on a reference departmental orthophotography (BD Ortho®) of the Institut géographique national (IGN), information on land cover, its use and the size of massifs (woodland, spinneys, thickets) are recorded on 25 m radius plots located around sampling points. Intersections of the plot with linear tree formations on a randomly oriented 1 km long transect are also counted.

The second inventory survey level involves monitoring and measuring the situation in the field in a subsample of around 8,000 sampling points per year. Data is first collected on the cover and landuse patterns. Field teams visit sampling points located in forests available for wood supply (FAWS). Many features are monitored concerning the forest stand (structure, cover, soil, etc.), vegetation (floristic survey), site conditions (slope, exposure, etc.) and many tree measurements are obtained (height, diameter, etc.).

Lying deadwood is inventoried along a randomly oriented 12 m transect centred on the sampling point, at all points in the forest. All deadwood logs lying along the transect and that fulfil the definition of lying deadwood (cf. Appendix III) is taken into account.

Statistical data published by NFI are generally derived from a combination of information obtained in the last five available annual surveys, apart from exceptions (in such cases, exceptions are noted and the survey data used is specified). Data from five surveys is required to form a large enough sample to generate relevant regional results. The accuracy of all data is measured with a confidence interval. If the variation coefficient associated with the area data is more than 30% over the estimated value, these results are considered as non-significant ('n.s.' noted in the tables). Other results (especially volume and basal area) are considered to be significant when their variation coefficient is not more than 80% over the estimated value and the area data are also significant. This difference in thresholds is due to the survey scale used, i.e. the plot for area measurements, and the tree for other data.

Appendix III

Main indicator definitions used for NFI inventories

The age assigned to a stand is determined on the basis of the age of two trees selected from amongst the six largest overstorey trees in the stand on the plot, and of the two species the most represented in these six trees (or the species the most represented if it represents over 75% of the cover of the six trees). When the two measured trees are of different species, it is the age of the most represented species in the cover that is recorded, otherwise it is the mean of the two ages. Boundary trees of different types than those in the core of the stand are excluded, while also, in cases where two stands of different generations (regeneration phase of regular treatments) are overlapping, accounting for the age of the future stand, without considering residual trees from the previous stand.
The tree age is measured by core sampling with an increment borer at breast height. The calculated ages are adjusted with a correction factor to determine the baseline tree age (original age).
The age attributed to the stand can thus generally be interpreted as representing the age of the main overstorey species of the stand.

The basal area of a tree is defined as its section at breast height, bark included. This section is calculated on the basis of the circumference measurement of the tree at breast height. The calculated values are then used to estimate unit area values according to the plot dimensions and the weight of the sampling points.

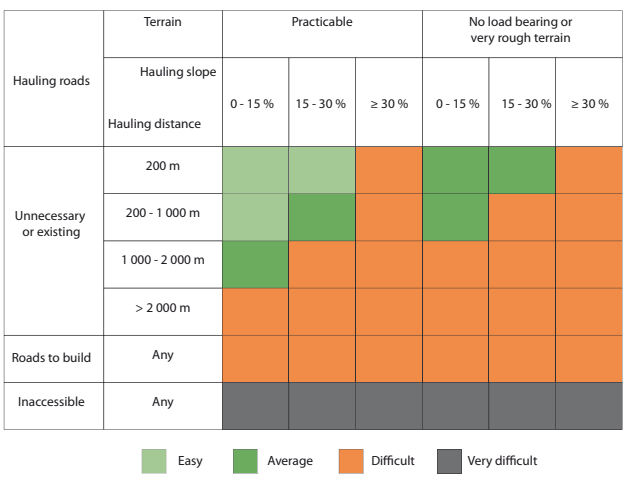
Closed forest corresponds to forest with an absolute tree cover rate of over 40%.

Lying deadwood includes windfalls of over 5 years old, residue of branches or wood logs scattered around a felling area that has been lying on the ground for over a year, residue from pruning or forestry operations (clearing) regardless of the date of these operations, and crown branches lying on the ground for more than a year after a logging operation or following an accident. More generally, lying deadwood involves wooden logs that will certainly be left on the ground. Logs gathered in windrows or piles are not taken into account. The minimum diameter of logs lying on the ground for inventory is 2.5 cm. There is no length limit. The log diameter is noted, along with the species and decomposition status (in five classes ranging from 'zero' to 'very high' decomposition).

Standing deadwood is a tree showing no sign of life above breast height but which is still standing. By convention, it is considered that all deadwood standing at a tilt angle of over 30° relative to the ground surface (due to an accident) can be classified in this category. The presumed death date is categorized as under 5 years or over 5 years.

Forest corresponds to lands covering an area of over 0.5 ha with a width of over 20 m, containing trees that can reach a height of over 5 m at maturity in situ, with over 10% tree cover. Lands predominantly used for agricultural or urban development purposes are excluded. The forest definition used until 2005 included thickets, excluded poplar plantations and specified that lands considered as forest had to be at least 25 m wide, with a minimum tree height of 7 m.

Forests available for wood supply are forests where logging is possible (without consideration for the economic viability margin), while being compatible for other possible functions. Poplar plantations (the relative free cover rate of cultivated poplar stands is over 75%) are classified amongst FAWS.



The logging potential of a stand is determined on the basis of five criteria concerning the conditions in which woodlands can or cannot be logged: the hauling distance, the presence of hauling roads, the maximum hauling slope, the bearing capacity of the ground and the extent of relief (these latter two variables are combined in one row under the heading 'terrain' in the table). These criteria are recorded directly in the field and combined in order to rank the logging potential of sites throughout France in four general classes: easy, average, difficult and very difficult.

Open forest corresponds to forest with an absolute tree cover rate of 10 to 40%.

Other wooded lands correspond to lands that do not qualify under the 'forest' category which cover an area of over 0.5 ha and are over 20 m wide, and contain trees of over 5 m height with 5-10% tree cover, or trees capable of reaching these levels in situ, or mixed cover with over 10% shrubs, saplings or trees. Lands predominantly used for agricultural or urban development purposes are excluded.

Poplar plantations are defined as stands with an absolute cover rate of 10% or more on an area of 5 ares or more and having a width of 20 m or more. The relative free cover rate of obviously cultivated poplar stands (derived from improvement programmes) should be 75% or more, at least in the stand overstorey.
Plantations are stands in which plants account for over 75% of the free cover. Plantations with a density of over 50 plants/ha are considered as forest. Wide-spaced plantations (density of 300 to 500 plants/ha), very wide-spaced plantations (maple, maple for wood supply, wild cherry, European pine, etc.) and poplar plantations are also considered as forest.

A silvoecoregion is the largest geographical zone within which factors that determine forest production or the distribution of large types of forest habitat vary uniformly between specific values according to a combination of values that differ from those that characterize adjacent silvoecoregions.

The main species at a sampling point is considered to be the main species in the layer eligible for inventory, when it is described, or otherwise the main species in the layer ineligible for inventory. The main species of each of these layers is considered to be the species with the highest relative*** free cover** in the layer. This rate may be very high (e.g. 100% in a maritime pine plantation) or relatively low (e.g. 20% in a mixed stand with several species).

The number of species eligible for inventory in a stand is calculated by NFI counts of the number of eligible species within a 25 m radius of a sampling point, regardless of the tree cover rate.

The species diversity at a sampling point (used for Indicator 4.1.1) is calculated on the basis of the relative free cover*** of the most represented species in the stand. If the relative free cover rate of the most present species in the stand is over 50% and the rate of the second most represented species is under 15%, then it is classified as a stand with one predominant species. In other cases, it is concluded that the stand contains at least two species with a relatively high percentage of cover.

Detailed stand types (e.g. pure oak stand, mixed oak stand, etc.) are defined as follows:

– pure stands are those in which the species considered as pure has a relative free cover rate of over 75%;
– mixed stands are those in which at least two species have a relative free cover rate of trees eligible for inventory of over 15%, i.e. if two species both have a relative free cover rate of 15%, the sum of their covers is 30%, and no species can alone account for 75% of the relative free cover.

A stand eligible for inventory has an absolute cover rate in the layer of trees eligible for inventory (trees with a circumference of 23.5 cm or higher at breast height = 7.5 cm or greater diameter) of over 15%. Stands not fulfilling these conditions are considered as 'ineligible' for inventory.

The forest structure of a stand is determined in the field from the rates of living relative high forest and coppice substands and, in cases in which there is less than 25% coppice, the vertical distribution of the high forest. The classification rules are as follows:

– coppices with less than 25% relative cover:
  • the relative free cover rate of tall stems* in the stem layer is under 2/3 => the stand has an irregular high forest structure;
  • the relative free cover rate of tall stems in the stem layer is 2/3 or higher => the stand has a regular high forest structure;
– coppices with at least 25% relative cover:
  • the relative cover rate of the high forest is under 25 % => the stand has a coppice structure;
  • the relative cover rate of the high forest is 25% or higher => the stand has a mixed high forest/coppice structure.

Temporarily unstocked stands are stands in which no live trees, eligible for inventory or not, have been observed at the sampling point following a human intervention (felling) or accident (fire, windfall) leading to an unstocked state. If the site is likely to have cover in the near future (within 5 years) and shows no signs of short-term ground cover changes, then it is still considered as forest.

Thickets are stands with an absolute tree cover rate* of over 40%, on an area ranging from 0.05 to 0.5 ha and a width of over 20 m**.**

*Here it is considered that the substand is made up of high forest stems with a total height that is 2/3 or more the height of the reference stand.

** The free cover rate of a substand is the sum of the crown covers of trees growing in this substand that have direct access to light relative to the area of the site (always 10).

***The relative free cover rate of a substand is the sum of free covers in this substand relative to the absolute tree cover in the entire stand.

Types of broadleaved, conifer and mixed stands are defined according to their relative free cover rate in broadleaved species in a stand eligible for inventory:

- if the relative free cover rate of broadleaved species is between 25% and 75% , it is a mixed stand;
- if the relative free cover rate of broadleaved species is less than 25%, it is a conifer stand;
- if the relative free cover rate of broadleaved species is over 75%, it is a broadleaved stand.

The volume, as measured by NFI, is an 'overbark stem volume' calculated on a volume table. It encompasses the main stem from ground level up to a 7 cm top diameter. For each tree, a percentage of rejected wood (rotted, broken, worm eaten, unusable even for fuelwood, or even absent, e.g. hollow trees, non-convex stems) is estimated. This percentage is systematically deducted from the published data, unless otherwise mentioned.

A windfall is a living or dead tree that is no longer standing following an accident that occurred less than 5 years previously. By convention, it is considered that any living or dead tree standing at a tilt angle of less than 30° relative to the ground surface (due to an accident) is classified in this category. Logged windfalls, and by extension stumps, are excluded from the inventory.

* The absolute tree cover rate in a stand is the sum of the covers of trees growing in the stand relative to the area of the site.

Appendix IV

Summary table of forest areas (in Kha)

			Closed forest	Open forest	TOTAL
			1000 ha	*1000 ha*	*1000 ha*
Forests available for wood supply (excluding poplar plantations)	Wooded stands	Stands eligible for inventory	13 335 ± 107	494 ± 40	13 828 ± 107
		Stands ineligible for inventory	899 ± 51	351 ± 40	1 251 ± 64
		Subtotal	**14 234 ± 103**	**845 ± 56**	**15 079 ± 105**
	Temporarily unstocked stands		42 ± 12	n. s.	44 ± 13
	Subtotal		**14 276 ± 103**	**848 ± 56**	**15 123 ± 104**
Poplar plantations			196 ± 20	-	196 ± 20
Forests available for wood supply			14 472 ± nd	848 ± 56	15 319 ± 104
Other forests			546 ± 39	208 ± 29	754 ± 48
Forest			**15 017 ± 99**	**1 056 ± 62**	**16 073 ± 100**

Source: NFI, survey years 2006 to 2009. The confidence interval at 95% (CI) is expressed in kha.

Appendix V

Detailed composition calculation method

Detailed compositions (or detailed stand types) presented in Indicators 1.1.4 and 1.2.2 are determined on the basis of the species diversity of the stand and the most represented species.

The species diversity of the stand is determined as follows:

– A stand is pure if:
- a single species is recorded in the plot,
- the relative free cover rate of the most represented species is over 75%;

– A stand is considered to have 'one predominant species' if the relative free cover rate of the most represented species is over 50% and the rate of the second most represented species is not over 15%;

– A stand is a two-species mix if:
- only two species have been recorded in the plot,
- the sum of the relative free cover rates of the two most represented species is over 75% and that of the third species the most represented is not over 15%,
- the sum of the relative free cover rates of the three most represented species is over 75%, and that of the fourth most represented species is not over 15% and the rate differs from that of the third most represented species;

– A stand is a three-species mix if:
- only three species have been recorded in the plot,
- the sum of the relative free cover rates of the three most represented species is over 75%, and that of the third most represented species is over 15% and that of the fourth most represented species is not over 15%,
- the sum of the relative free cover rates of the four most represented species is over 75%, and that of the fourth most represented species is not over 15% and the rate differs from that of the third most represented species;

– A stand is a four-species mix if:
- only four species have been recorded in the plot,
- the sum of the relative free cover rates of the four most represented species is over 75%, and that of the fourth most represented species is over 15% and that of the fifth most represented species is not over 15%;

– In other cases, the stand is classified as a varied mixed stand.

Once the species diversity has been determined, NFI uses the most represented species (one or more) to determine the type of stand composition.
For instance, a pure stand or a stand with one predominant species in which the most represented species is beech is called a 'pure beech stand' and classified as such in Indicators 1.1.4 and 1.2.2.
A two-species mixed stand in which the two concerned species are ash and pedunculate oak is called a 'mixed ash-pedunculate oak stand' and classified under the 'oak-ash stand' category in Indicators 1.1.4 and 1.2.2.
A mixed stand with two oak species (e.g. pedunculate and sessile oak) is called a 'two-species oak stand', whereas a mixture of one oak and another broadleaved species is called a 'mixed oak stand'.

Appendix VI

Survey year in poplar plantations

Department	Cycle	Reference year	Survey of volume
GIRONDE	1	1961	NON
LANDES	1	1961	NON
GERS	1	1962	NON
LOT-ET-GARONNE	1	1962	NON
LOT	1	1963	NON
TARN-ET-GARONNE	1	1963	NON
DORDOGNE	1	1964	NON
MEUSE	1	1964	NON
PUY-DE-DÔME	1	1966	NON
CHARENTE	1	1967	NON
CHARENTE-MARITIME	1	1968	NON
LOIRE	1	1968	NON
LOIR-ET-CHER	1	1969	NON
SAÔNE-ET-LOIRE	1	1969	NON
JURA	1	1970	NON
MEURTHE-ET-MOSELLE	1	1970	NON
TARN	1	1970	NON
VENDÉE	1	1970	NON
CÔTE-D'OR	1	1971	NON
PYRÉNÉES-ATLANTIQUES	1	1971	NON
DEUX-SÈVRES	1	1972	NON
MAYENNE	1	1972	NON
RHÔNE	1	1972	NON
SARTHE	1	1972	NON
AIN	1	1973	NON
INDRE	1	1973	NON
ISÈRE	1	1973	NON
LOIRE-ATLANTIQUE	1	1973	NON
MAINE-ET-LOIRE	1	1973	NON
MOSELLE	1	1973	NON
AUBE	1	1974	NON
CALVADOS	1	1974	NON
DRÔME	1	1974	NON
NORD	1	1974	NON
PAS-DE-CALAIS	1	1974	NON
VIENNE	1	1974	NON
EURE	1	1975	NON
HAUTE-GARONNE	1	1975	NON
HAUTE-MARNE	1	1975	NON
MANCHE	1	1975	NON
ORNE	1	1975	NON
SAVOIE	1	1975	OUI
YONNE	1	1975	NON
CHER	1	1976	OUI
HAUTE-SAÔNE	1	1976	OUI
INDRE-ET-LOIRE	1	1976	OUI
SEINE-ET-MARNE	1	1978	OUI
BAS-RHIN	1	1979	OUI
GERS	2	1979	OUI
LOIRET	1	1979	OUI
LOT-ET-GARONNE	2	1979	OUI
PARIS	1	1979	OUI
TARN	2	1979	OUI
TARN-ET-GARONNE	2	1979	OUI
CÔTE-D'OR	2	1980	OUI
ILLE-ET-VILAINE	1	1980	OUI
JURA	2	1980	OUI
LOT	2	1980	OUI
MEURTHE-ET-MOSELLE	2	1980	OUI
MEUSE	2	1980	OUI
SAÔNE-ET-LOIRE	2	1980	OUI
AVEYRON	2	1981	OUI
CÔTES-D'ARMOR	2	1981	OUI
LOIRE	2	1981	OUI
DORDOGNE	2	1982	OUI
DROME	2	1982	OUI
LOIR-ET-CHER	2	1982	OUI
MOSELLE	2	1982	OUI
RHÔNE	2	1982	OUI
AIN	2	1983	OUI
AUBE	2	1983	OUI
CHARENTE	2	1983	OUI
MAINE-ET-LOIRE	2	1983	OUI
MAYENNE	2	1983	OUI
CHARENTE-MARITIME	2	1984	OUI
HAUTE-SAÔNE	2	1984	OUI
ISERE	2	1984	OUI
SARTHE	2	1984	OUI
TERRITOIRE DE BELFORT	2	1984	OUI
VENDÉE	2	1984	OUI
CHER	2	1985	OUI
DEUX-SÈVRES	2	1985	OUI
HAUTE-MARNE	2	1985	OUI
INDRE-ET-LOIRE	2	1985	OUI
LOIRE-ATLANTIQUE	2	1985	OUI
PYRÉNÉES-ATLANTIQUES	2	1985	OUI
SAVOIE	2	1985	OUI
NORD	2	1986	OUI
PAS-DE-CALAIS	2	1986	OUI
VIENNE	2	1986	OUI
YONNE	2	1986	OUI
ALLIER	3	1987	OUI

Department	Cycle	Reference year	Survey of volume
OISE	1	1976	OUI
PUY-DE-DOME	2	1976	OUI
SEINE-MARITIME	1	1976	NON
SOMME	1	1976	OUI
TERRITOIRE DE BELFORT	1	1976	NON
AISNE	1	1977	OUI
GIRONDE	2	1977	OUI
MARNE	1	1977	OUI
ALLIER	2	1978	OUI
ARDENNES	1	1978	OUI
ARIÈGE	2	1978	OUI
HAUT-RHIN	1	1978	NON
LANDES	2	1978	OUI
GERS	3	1989	OUI
LOT-ET-GARONNE	3	1989	OUI
SAÔNE-ET-LOIRE	3	1989	OUI
SEINE-MARITIME	2	1989	OUI
SOMME	2	1989	OUI
TARN-ET-GARONNE	3	1989	OUI
ARIÈGE	3	1990	OUI
CÔTE-D'OR	3	1990	OUI
LOT	3	1990	OUI
OISE	2	1990	OUI
AISNE	2	1991	OUI
MEUSE	3	1991	OUI
DORDOGNE	3	1992	OUI
JURA	3	1992	OUI
LOIRET	2	1992	OUI
TARN	3	1992	OUI
CHARENTE	3	1993	OUI
CHARENTE-MARITIME	3	1993	OUI
SEINE-ET-MARNE	2	1993	OUI
AUBE	3	1994	OUI
VENDÉE	3	1994	OUI
AIN	3	1995	OUI
CÔTES-D'ARMOR	3	1995	NON
DEUX-SÈVRES	3	1995	OUI
HAUTE-SAÔNE	3	1995	OUI
PYRENEES-ATLANTIQUES	3	1995	OUI
DRÔME	3	1996	OUI
ARDENNES	2	1987	OUI
CALVADOS	2	1987	OUI
GIRONDE	3	1987	OUI
HAUTE-GARONNE	2	1987	OUI
MANCHE	2	1987	OUI
MARNE	2	1987	OUI
EURE	2	1988	OUI
HAUT-RHIN	2	1988	OUI
INDRE	2	1988	OUI
LANDES	3	1988	OUI
ORNE	2	1988	OUI
PUY-DE-DÔME	3	1988	OUI
BAS-RHIN	2	1989	OUI
HAUTE-MARNE	3	1996	OUI
VIENNE	3	1996	OUI
INDRE	3	1997	OUI
ISÈRE	3	1997	OUI
MAINE-ET-LOIRE	3	1997	OUI
MARNE	3	1997	OUI
ARDENNES	3	1998	OUI
GIRONDE	4	1998	OUI
LOIR-ET-CHER	3	1998	OUI
CHER	3	1999	OUI
INDRE-ET-LOIRE	3	1999	OUI
LANDES	4	1999	OUI
SARTHE	3	1999	OUI
YONNE	3	1999	OUI
BAS-RHIN	3	2000	OUI
CALVADOS	3	2000	OUI
HAUTE-GARONNE	3	2000	OUI
LOIRE-ATLANTIQUE	3	2000	OUI
LOT-ET-GARONNE	4	2000	OUI
MAYENNE	3	2000	OUI
NORD	3	2000	OUI
PAS-DE-CALAIS	3	2000	OUI
SAVOIE	3	2000	OUI
ALLIER	4	2001	OUI
GERS	4	2001	OUI
MANCHE	3	2001	OUI
OISE	3	2001	OUI
ORNE	3	2001	OUI
EURE	3	2002	OUI
SEINE-MARITIME	3	2002	OUI
SOMME	3	2002	OUI
TARN-ET-GARONNE	4	2002	OUI
AISNE	3	2003	OUI
PUY-DE-DÔME	4	2003	OUI
SAÔNE-ET-LOIRE	4	2003	OUI
CÔTE-D'OR	4	2004	OUI
PARIS	3	2004	OUI
SEINE-ET-MARNE	3	2004	OUI

Appendix VII

List of trees found in French forests

Note: this list was drawn up with the help of Mr Jean-Claude Rameau (ENGREF), based on two sources, i.e. lists of the French National Forest Inventory (NFI) and the guide 'Flore forestière française, guide écologique illustré', published by IDF-CNPF. It was further supplemented by INRA and AFOCEL. This selection overlooks a certain number of exotic species that generally occur in small or less experimental areas.

List of trees indigenous to France and found in forests

BROADLEAVED

1	*Acer campestre*	field maple	29	*Pyrus amygdaliformis*	almond-leaved pear
2	*Acer monspessulanum*	Montpellier maple	30	*Pyrus pyraster*	wild pear
3	*Acer opalus*	Italian maple	31	*Quercus cerris*	Turkey oak
4	*Acer platanoides*	Norway maple	32	*Quercus ilex*	holm oak
5	*Acer pseudoplatanus*	sycamore	33	*Quercus petraea*	sessile oak
6	*Alnus cordata*	Corsican alder	34	*Quercus pubescens*	pubescent oak
7	*Alnus glutinosa*	common alder	35	*Quercus pyrenaica*	Pyrenean oak
8	*Alnus incana*	grey alder	36	*Quercus robur*	pedunculate oak
9	*Betula pendula*	silver birch	37	*Quercus suber*	cork oak
10	*Betula pubescens*	hairy birch	38	*Salix alba*	white willow
11	*Carpinus betulus*	hornbeam	39	*Salix caprea*	sallow, goat willow
12	*Castanea sativa*	sweet chestnut	40	*Salix daphnoides*	violet willow
13	*Cornus mas*	cornelian cherry	41	*Salix fragilis*	crack willow
14	*Crataegus monogyna*	common hawthorn	42	*Salix pentandra*	bay-leaved willow
15	*Fagus sylvatica*	beech	43	*Salix viminalis*	common osier
16	*Fraxinus angustifolia*	narrow-leaved ash	44	*Sambucus nigra*	elder
17	*Fraxinus excelsior*	common ash	45	*Sorbus aria*	common whitebeam
18	*Fraxinus ornus*	manna or flowering ash	46	*Sorbus aucuparia*	rowan, mountain ash
19	*Ilex aquifolium*	holly	47	*Sorbus domestica*	service tree
20	*Malus sylvestris*	crab apple	48	*Sorbus latifolia*	service tree of Fontainebleau
21	*Olea europaea*	olive	49	*Sorbus mougeotii*	Mougeot service tree
22	*Ostrya carpinifolia*	hop-hornbeam	50	*Sorbus torminalis*	wild service tree
23	*Populus alba*	white poplar	51	*Tamarix gallica*	tamarisk
24	*Populus canescens*	grey poplar	52	*Tilia argentea*	silver-leaved lime
25	*Populus nigra*	black poplar	53	*Tilia cordata*	small-leaved lime
26	*Populus tremula*	aspen	54	*Tilia platyphyllos*	broad-leaved lime
27	*Prunus avium*	wild cherry	55	*Ulmus glabra*	wych elm
28	*Prunus padus*	bird cherry	56	*Ulmus laevis*	European white elm
			57	*Ulmus minor*	lock elm

CONIFERS

1	*Abies alba*	silver fir	9	*Pinus mugo*	dwarf mountain pine
2	*Juniperus communis*	common juniper	10	*Pinus nigra laricio corsicana*	Corsican pine
3	*Juniperus oxycedrus*	prickly juniper, cade	11	*Pinus nigra clusiana*	Pinus nigra clusiana
4	*Juniperus thurifera*	Spanish juniper, savin	12	*Pinus pinaster*	maritime pine
5	*Larix decidua*	European larch	13	*Pinus pinea*	stone or umbrella pine
6	*Picea abies*	common spruce	14	*Pinus sylvestris*	Scots pine
7	*Pinus cembra*	arolla pine	15	*Pinus uncinata*	mountain pine
8	*Pinus halepensis*	Aleppo pine	16	*Taxus baccata*	yew

List of trees acclimatized in France and relatively well represented in forests

An acclimatized tree is one which:

– was introduced long enough ago to have clearly shown, over more than one generation, that it is well adapted to the environmental and climatic conditions prevailing in France;

– can reproduce naturally in forests, without human intervention.

BROADLEAVED

1	*Juglans regia*	common walnut
2	*Quercus rubra*	red oak
3	*Robinia pseudacacia*	false acacia
4	*Celtis australis*	hackberry tree

CONIFERS

1	*Abies nordmanniana*	caucasina fir
2	*Cedrus atlantica*	Atlas cedar
3	*Cupressus sempervirens*	Italian or funeral cyprus
4	*Pinus nigra nigricans*	Austrian pine
5	*Pinus nigra laricio calabrica*	Calabrian pine
6	*Pseudotsuga menziesii*	Douglas fir

List of exotic trees sometimes found in forests

BROADLEAVED

1	*Acacia dealbata*	mimosa
2	*Acer negundo*	box elder
3	*Aesculus hippocastanum*	horse chestnut
4	*Ailanthus altissima*	tree of heaven
5	*Eucalyptus sp.*	eucalyptus
6	*Juglans nigra*	black walnut
7	*Gleditschia triacanthos*	honey locust
8	*Laburnum anagyroïdes*	laburnum
9	*Liquidambar styraciflua*	liquidambar
10	*Liriodendron tulipifera*	tulip tree
11	*Platanus ×hispanica*	London plane
12	*Platanus orientalis*	oriental plane
13	*Populus deltoides*	eastern cottonwood
14	*Populus trichocarpa*	black cottonwood
15	*Prunus laurocerasus*	cherry laurel
16	*Prunus lusitanica*	Portuguese laurel
17	*Prunus serotina*	black cherry
18	*Quercus palustris*	pin oak

CONIFERS

1	*Abies bornmulleriana*	Turkish fir
2	*Abies cephalonica*	Greek fir
3	*Abies cilicica*	cilicia fir
4	*Abies concolor*	Colorado fir
5	*Abies grandis*	Vancouver fir
6	*Abies numidica*	numidian fir
7	*Abies pinsapo*	Spanish or hedgehog fir
8	*Abies procera*	noble fir
9	*Calocedrus decurrens*	California incense tree
10	*Cedrus brevifolia*	cyprus cedar
11	*Cedrus deodara*	deodar
12	*Cedrus libani*	cedar of Lebanon
13	*Chamaecyparis lawsoniana*	Lawson cypress
14	*Cryptomeria japonica*	Japanese red cedar
15	*Cupressocyparis leylandii*	Leyland cypress
16	*Cupressus arizonica*	Arizona cypress
17	*Cupressus atlantica*	Atlas cypress
18	*Cupressus macrocarpa*	Monterey cypress
19	*Larix eurolepis*	Dunkeld larch
20	*Larix kaempferi*	Japanese larch
21	*Metasequoia glyptostroboides*	dawn redwood
22	*Picea sitchensis*	sitka spruce
23	*Pinus brutia*	Turkish pine
24	*Pinus contorta*	lodgepole pine
25	*Pinus eldarica*	eldarica pine
26	*Pinus radiata*	Monterey pine
27	*Pinus rigida*	northern pitch pine
28	*Pinus taeda*	incense pine
29	*Pinus strobus*	Weymouth pine
30	*Sequoia sempervirens*	redwood
31	*Sequoiadendron giganteum*	wellingtonia, giant sequoia
32	*Taxodium distichum*	swamp or bald cypress
33	*Thuja plicata*	western red cedar
34	*Tsuga heterophylla*	western hemlock

Appendix VIII

Tree species observed by NFI and corresponding area

A species usually designates a tree species but can sometimes refer to a sub-species or variety of special interest or to several species.
Species observed by NFI are:

Broadleaved				Conifers			
Indigenous species							
	1000 ha				*1000 ha*		
Pedunculate oak	1 975	±	67	Maritime pine	1 106	±	48
Sessile oak	1 639	±	56	Scots pine	896	±	46
Pubescent oak	1 370	±	56	Corsican pine	184	±	22
Holm oak	706	±	45	Stone or umbrella pine	< 24		
Pyrenean oak	48	±	12	Aleppo pine	213	±	26
Cork oak	89	±	17	Mountain pine	56	±	12
Beech	1 418	±	55	Arolla pine	< 5		
Chestnut	739	±	42	Dwarf mountain pine	< 2		
Hornbeam	561	±	35	Silver fir	565	±	35
Birch	308	±	28	Common spruce	590	±	37
Large alder	139	±	20	Larch	102	±	15
Large maple	111	±	17	Yew	< 2		
Common ash	576	±	39	Spanish juniper, savin	< 12		
Elm	< 32			Other indigenous conifers	NA		
Linden	62	±	13				
Small maple	63	±	14				
Cherry or wild cherry	53	±	14				
Other fruit tree	< 39						
Aspen	105	±	16				
Willow	121	±	18				
Olive	< 15						
Hazel	63	±	13				
Hop-hornbeam	< 13						
Non-cultivated poplar	< 46						
Turkey oak	< 15						
Cornelian cherry	< 4						
Wild service tree	< 8						
Other indigenous broadleaved	< 48						

Acclimatized species							
Red oak	43	±	10	Austrian pine	197	±	23
False acacia	191	±	23	Douglas fir	404	±	32
Hackberry tree	nd			Atlas cedar	< 23		
Walnut	< 5			Cypress	< 5		
Stawberry tree	< 69			Caucasina fir	< 4		
Exotic species							
Cultivated poplar	224	±	22	Weymouth pine	< 7		
Plane	< 4			Mediterranean firs	nd		
Eucalyptus	< 8			Double balsam fir	< 24		
Laburnum	< 4			Sitka spruce	46	±	10
Tulip tree	nd			Exotic larch	< 20		
Other exotic broadleaved	< 10			Cedar of Lebanon	nd		
				Incense pine	< 7		
				Other exotic conifers	< 10		

Source: NFI, survey years 2006 to 2009.
Relevant domain: FAWS.

Appendix IX

Detailed land-use transition matrices

Teruti transition matrix 1992-1997

	Areas with structures	Coated or stabilized areas	Other man-made areas	Farmland	Permanent crops	Other cultivated land associated with agricultural production	Forests (incl. poplar plantations)	Other wooded lands	Heathland, fallows, maquis, garrigues	Grasslands	Natural bare land	Wetlands and underwater zones	Prohibited areas	Total 1997
Areas with structures	670 247	10 093	26 782	20 509	3 510	7 572	4 373	3 790	10 009	14 820	200	998	302	773 205
Coated or stabilized areas	12 114	1 448 355	43 268	27 097	3 415	48 650	15 660	12 739	16 456	20 209	600	2 916	1 008	1 652 487
Other man-made areas	14 031	34 923	1 132 233	65 903	11 406	35 165	18 245	24 904	59 126	77 274	990	7 128	499	1 481 827
Farmland	2 607	11 335	15 955	16 102 458	98 676	31 833	28 626	37 825	105 622	1 013 035	0	5 985	102	17 454 059
Permanent crops	905	2 010	2 707	82 822	1 299 370	5 410	5 220	4 817	22 128	24 583	195	502	0	1 450 669
Other cultivated land associated with agricultural production	6 316	15 752	16 488	33 026	7 732	482 759	2 458	5 447	9 669	22 469	0	900	101	603 117
Forests (incl. poplar plantations)	1 405	9 073	14 130	51 841	9 112	4 190	14 373 776	152 107	390 154	134 610	19 412	6 604	711	15 167 125
Other wooded lands	2 606	5 862	20 048	16 129	4 837	5 713	71 609	1 369 667	42 884	28 656	1 889	4 193	304	1 574 397
Heathland, fallows, maquis, garrigues	1 108	7 888	23 805	128 697	40 549	10 337	79 092	30 461	1 746 598	278 196	25 033	4 298	99	2 376 161
Grasslands	1 907	4 680	19 813	961 922	31 573	13 165	24 094	39 293	158 844	9 135 989	22 293	6 983	100	10 420 656
Natural bare land	196	804	302	302	99	100	6 147	2 845	15 114	16 546	829 805	1 195	0	873 455
Wetlands and underwater zones	808	2 702	7 901	11 574	507	852	6 115	7 906	11 820	22 864	3 290	891 880	0	968 219
Prohibited areas	101	202	200	793	0	0	1 322	0	403	198	0	0	120 662	123 881
Total 1992	**714 351**	**1 553 679**	**1 323 632**	**17 503 073**	**1 510 786**	**645 746**	**14 636 737**	**1 691 801**	**2 588 827**	**10 789 449**	**903 707**	**933 582**	**123 888**	**54 919 258**

Source : SSP - Teruti
Source: SSP – Teruti.
The above matrix indicates landuse patterns in France between one year (n) and another year (n+p).
- Rows indicate the landuse during year (n) at sampling points with landuse X in (n+p).
This highlights the ORIGIN of sampling points with landuse X in (n+p).
The figures at the end of the rows represent the total area of sampling points with landuse X in (n+p).
- Columns indicate the landuse in (n+p) at sampling points with landuse Y in (n).
This highlights the FATE of sampling points with landuse Y in (n).
The figures at the bottom of the columns represent the total area of sampling points with landuse Y in (n).
- The diagonal cells indicate the areas of sampling points where there was no landuse change.

Teruti-Lucas transition matrix 1997-2003

	Areas with structures	Coated or stabilized areas	Other man-made areas	Farmland	Permanent crops	Other cultivated land associated with agricultural production	Forests (incl. poplar plantations)	Other wooded lands	Heathland, fallows, maquis, garrigues	Grasslands	Natural bare land	Wetlands and underwater zones	Prohibited areas	Total 2003
Areas with structures	739 893	11 982	32 833	33 823	3 817	7 897	6 420	4 011	14 830	21 574	203	396	0	877 679
Coated or stabilized areas	8 548	1 566 362	40 171	31 144	3 456	31 006	17 224	10 799	12 461	19 554	498	2 151	0	1 743 374
Other man-made areas	11 136	25 945	1 303 248	76 488	10 980	35 436	19 864	21 956	49 647	79 863	1 299	2 903	100	1 638 865
Farmland	3 609	11 065	13 397	16 004 659	98 648	21 898	32 827	22 094	92 845	882 401	100	6 073	100	17 189 716
Permanent crops	805	1 205	3 692	86 098	1 258 245	5 655	7 339	2 993	26 686	22 867	99	101	0	1 415 785
Other cultivated land associated with agricultural production	3 054	10 236	11 734	26 937	5 786	467 708	2 852	3 497	7 365	20 006	99	202	0	559 476
Forests (incl. poplar plantations)	802	8 314	11 865	36 804	6 690	1 997	14 900 127	89 060	232 505	95 872	17 352	6 549	408	15 408 345
Other wooded lands	1 560	4 807	15 750	10 614	3 607	4 063	52 673	1 372 491	26 024	20 440	497	4 059	100	1 516 685
Heathland, fallows, maquis, garrigues	1 298	4 096	19 601	101 072	30 119	11 206	80 714	14 626	1 760 225	188 150	25 766	3 644	0	2 240 517
Grasslands	1 691	5 369	21 203	1 035 423	28 805	15 053	32 268	27 859	137 593	9 043 911	34 971	4 497	204	10 388 847
Natural bare land	99	498	300	0	101	103	7 486	492	11 368	16 071	790 876	2 798	0	830 192
Wetlands and underwater zones	101	1 601	7 539	10 979	408	995	6 328	4 209	3 698	9 838	1 694	934 838	0	982 228
Prohibited areas	605	1 009	499	0	0	101	1 012	304	902	100	0	0	122 969	127 501
Total 1997	**773 201**	**1 652 489**	**1 481 832**	**17 454 041**	**1 450 662**	**603 118**	**15 167 134**	**1 574 391**	**2 376 149**	**10 420 647**	**873 454**	**968 211**	**123 881**	**54 919 210**

Teruti-Lucas transition matrix 2006-2010

	Areas with structures	Coated or stabilized areas	Other man-made areas	Farmland	Permanent crops	Other cultivated land associated with agricultural production	Forests (incl. poplar plantations)	Other wooded lands	Heathland, fallows, maquis, garrigues	Grasslands	Natural bare land	Wetlands and underwater zones	Prohibited areas	Total 2010
Areas with structures	697 344	26 374	35 603	27 712	3 325	2 330	5 568	5 954	14 399	25 048	1 795	359	2 877	848 686
Coated or stabilized areas	31 620	1 970 116	94 644	50 618	5 943	22 763	41 331	33 275	23 562	31 896	7 984	1 976	4 680	2 320 409
Other man-made areas	25 398	56 464	1 330 828	67 583	6 473	12 577	22 232	32 737	49 034	83 160	8 822	3 152	34 823	1 733 285
Farmland	6 205	21 678	38 713	16 088 340	94 421	81 802	30 945	39 217	71 382	843 888	8 262	5 223	3 153	17 333 229
Permanent crops	901	3 060	3 332	66 345	1 077 664	18 141	9 813	3 588	11 164	19 515	902	359	539	1 215 322
Other cultivated land associated with agricultural production	537	10 428	7 374	63 841	13 862	101 047	2 337	2 881	7 639	20 243	1 619	1 079	1 445	234 330
Forests (incl. poplar plantations)	1 083	16 922	16 813	22 762	8 704	2 511	14 612 946	150 559	213 122	56 923	7 366	6 564	20 321	15 136 596
Other wooded lands	3 417	15 491	26 725	31 201	4 495	3 960	87 907	1 579 208	42 443	61 230	2 165	4 141	807	1 863 189
Heathland, fallows, maquis, garrigues	4 134	15 120	39 970	108 791	27 833	18 057	210 044	34 534	2 198 758	161 562	16 513	13 849	4 135	2 853 299
Grasslands	3 240	16 738	43 516	535 488	21 757	22 012	49 866	53 201	109 055	8 593 918	5 775	5 935	1 440	9 461 940
Natural bare land	178	3 772	7 375	10 075	4 680	3 599	15 028	3 950	22 057	14 339	876 889	3 944	1 599	967 486
Wetlands and underwater zones	1 078	3 434	8 094	10 069	1 439	1 709	6 751	7 999	24 460	14 016	4 051	817 228	718	901 046
Prohibited areas	0	0	0	2 244	0	0	0	0	0	0	0	0	48 184	50 428
Total 2006	**775 134**	**2 159 597**	**1 652 988**	**17 085 068**	**1 270 597**	**290 507**	**15 094 768**	**1 947 103**	**2 787 075**	**9 925 738**	**942 143**	**863 808**	**124 721**	**54 919 246**

Appendix X

Areas and volumes by region and forest structure

Site	Forest structure	1000 ha			1000 m³		
Alsace	High forest	279	±	13	77 011	±	7 679
	Mixed	30	±	8	4 377	±	2 189
	Coppice	1 to 7			0 to 440		
	Open forest	2 to 10			0 to 343		
	Poplar plantation	0 to 2			0 to 117		
Total Alsace		**320**	**±**	**11**	**81 672**	**±**	**7 984**
Aquitaine	High forest	1 223	±	39	147 138	±	11 249
	Mixed	327	±	29	44 664	±	5 842
	Coppice	184	±	23	15 275	±	3 345
	Open forest	40	±	12	960	±	563
	Poplar plantation	14 to 29			0 to 5 556		
Total Aquitaine		**1 794**	**±**	**29**	**210 297**	**±**	**12 165**
Auvergne	High forest	447	±	24	128 338	±	10 649
	Mixed	205	±	20	31 799	±	4 653
	Coppice	19 to 36			816 to 3 138		
	Open forest	10 to 23			89 to 1 571		
	Poplar plantation	0 to 6			0 to 1 596		
Total Auvergne		**699**	**±**	**22**	**163 563**	**±**	**11 075**
Basse-Normandie	High forest	105	±	10	21 031	±	3 946
	Mixed	40	±	8	7 153	±	1 984
	Coppice	10 to 21			226 to 2 590		
	Open forest	1 to 10			0 to 624		
	Poplar plantation	2 to 8			0 to 2 330		
Total Basse-Normandie		**171**	**±**	**8**	**30 689**	**±**	**4 386**
Bourgogne	High forest	451	±	26	93 006	±	8 596
	Mixed	456	±	26	77 707	±	6 272
	Coppice	54	±	11	4 540	±	1 651
	Open forest	2 to 11			0 to 520		
	Poplar plantation	4 to 13			192 to 1 332		
Total Bourgogne		**977**	**±**	**20**	**176 114**	**±**	**8 937**
Bretagne	High forest	192	±	16	41 149	±	5 320
	Mixed	72	±	12	13 048	±	3 109
	Coppice	62	±	11	6 519	±	3 250
	Open forest	13 to 29			136 to 774		
	Poplar plantation	4 to 12			245 to 2 444		
Total Bretagne		**355**	**±**	**16**	**62 515**	**±**	**6 718**
Centre	High forest	463	±	25	88 578	±	7 361
	Mixed	346	±	24	57 053	±	5 317
	Coppice	81	±	13	7 939	±	2 176
	Open forest	15 to 31			0 to 1 936		
	Poplar plantation	13 to 25			823 to 3 885		
Total Centre		**933**	**±**	**21**	**156 869**	**±**	**8 209**

Site	Forest structure	1000 ha			1000 m³		
Champagne-Ardenne	High forest	445	±	22	88 438	±	7 559
	Mixed	202	±	19	31 036	±	4 555
	Coppice	7 to 18			0 to 1 373		
	Open forest	1 to 9			0 to 358		
	Poplar plantation	22	±	6	2 506	±	1 721
Total Champagne-Ardenne		**687**	**±**	**18**	**122 747**	**±**	**8 191**
Corse	High forest	60	±	14	15 013	±	5 319
	Mixed	147	±	19	16 036	±	3 704
	Coppice	80	±	18	3 401	±	1 143
	Open forest	103	±	26	1 969	±	1 314
Total Corse		**390**	**±**	**31**	**36 420**	**±**	**5 924**
Franche-Comté	High forest	503	±	22	131 420	±	10 071
	Mixed	177	±	18	28 248	±	4 320
	Coppice	8 to 19			262 to 1 673		
	Open forest	4 to 13			0 to 514		
	Poplar plantation	0 to 6			0 to 2 069		
Total Franche-Comté		**704**	**±**	**18**	**161 420**	**±**	**10 375**
Haute-Normandie	High forest	154	±	14	31 548	±	4 332
	Mixed	43	±	10	6 685	±	2 229
	Coppice	10 to 24			465 to 2 651		
	Open forest	0 to 3			0 to 0		
	Poplar plantation	0 to 5			0 to 525		
Total Haute-Normandie		**216**	**±**	**13**	**39 976**	**±**	**4 488**
Île-de-France	High forest	164	±	14	32 731	±	4 325
	Mixed	67	±	11	10 920	±	2 799
	Coppice	16 to 31			1 047 to 3 210		
	Open forest	0 to 5			0 to 75		
	Poplar plantation	1 to 7			0 to 2 120		
Total Île-de-France		**260**	**±**	**11**	**46 680**	**±**	**4 654**
Languedoc-Roussillon	High forest	334	±	27	53 000	±	7 765
	Mixed	300	±	27	36 439	±	5 670
	Coppice	334	±	27	17 826	±	3 063
	Open forest	176	±	25	2 150	±	970
Total Languedoc-Roussillon		**1 144**	**±**	**31**	**109 414**	**±**	**8 754**
Limousin	High forest	312	±	21	74 714	±	7 884
	Mixed	189	±	18	27 759	±	4 329
	Coppice	53	±	10	4 004	±	1 634
	Open forest	2 to 9			0 to 526		
	Poplar plantation	0 to 3			0 to 1 470		
Total Limousin		**560**	**±**	**18**	**106 856**	**±**	**8 741**
Lorraine	High forest	718	±	23	152 430	±	10 519
	Mixed	124	±	16	13 719	±	3 366
	Coppice	2 to 10			0 to 251		
	Open forest	6 to 17			0 to 650		
	Poplar plantation	0 to 4			0 to 857		
Total Lorraine		**861**	**±**	**19**	**166 761**	**±**	**10 906**

Site	Forest structure	1000 ha			1000 m³		
Midi-Pyrénées	High forest	481	±	30	93 260	±	8 941
	Mixed	527	±	32	71 110	±	6 670
	Coppice	199	±	22	12 169	±	2 505
	Open forest	90	±	20	3 to 2 590		
	Poplar plantation	6 to 18			0 to 2 109		
Total Midi-Pyrénées		**1 308**	**±**	**33**	**178 850**	**±**	**10 444**
Nord-Pas-de-Calais	High forest	71	±	10	14 334	±	3 586
	Mixed	5 to 15			415 to 1 921		
	Coppice	6 to 17			72 to 1 493		
	Open forest	0 to 4			0 to 229		
	Poplar plantation	7 to 14			120 to 4 097		
Total Nord-Pas-de-Calais		**104**	**±**	**11**	**18 432**	**±**	**3 735**
Pays de la Loire	High forest	170	±	15	31 748	±	5 007
	Mixed	70	±	12	12 459	±	3 142
	Coppice	51	±	10	5 343	±	2 000
	Open forest	7 to 17			0 to 316		
	Poplar plantation	19	±	5	2 802	±	1 718
Total Pays de la Loire		**323**	**±**	**13**	**52 505**	**±**	**5 646**
Picardie	High forest	191	±	16	40 898	±	5 241
	Mixed	74	±	13	11 948	±	2 666
	Coppice	10 to 22			56 to 2 149		
	Open forest	0 to 6			0 to 189		
	Poplar plantation	28	±	7	3 628	±	2 280
Total Picardie		**312**	**±**	**16**	**57 622**	**±**	**5 808**
Poitou-Charentes	High forest	100	±	15	12 868	±	3 358
	Mixed	162	±	18	22 568	±	3 305
	Coppice	106	±	14	9 580	±	2 288
	Open forest	6	to	16	0	to	185
	Poplar plantation	11	to	25	744	to	4 192
Total Poitou-Charentes		**396**	**±**	**19**	**47 574**	**±**	**4 739**
Provence-Alpes-Côte d'Azur	High forest	516	±	33	72 057	±	7 044
	Mixed	332	±	29	27 926	±	4 119
	Coppice	227	±	25	8 513	±	2 070
	Open forest	226	±	27	4 748	±	1 420
Total Provence-Alpes-Côte d'Azur		**1 301**	**±**	**37**	**113 243**	**±**	**8 133**
Rhône-Alpes	High forest	840	±	36	208 305	±	14 888
	Mixed	424	±	30	59 211	±	6 480
	Coppice	159	±	19	9 206	±	2 094
	Open forest	73	±	15	0 to 3 670		
	Poplar plantation	4 to 14			0 to 2 257		
Total Rhône-Alpes		**1 504**	**±**	**35**	**279 403**	**±**	**15 643**
Total		**15 319**	**±**	**104**	**2 419 623**	**±**	**40 511**

Species	Diameter class (in cm)	1000 m³		
Pedunculate oak	Small diameter trees	39 506	±	2 747
	Medium diameter trees	140 860	±	5 759
	Large diameter trees	80 128	±	3 889
	Very large diameter trees	28 678	±	2 700
Total pedunculate oak		289 172	±	11 324
Sessile oak	Small diameter trees	42 459	±	3 219
	Medium diameter trees	133 686	±	5 973
	Large diameter trees	77 386	±	4 246
	Very large diameter trees	23 673	±	2 498
Total sessile oak		277 203	±	11 931
Pubescent oak	Small diameter trees	52 508	±	3 531
	Medium diameter trees	39 377	±	2 967
	Large diameter trees	4 393	±	759
	Very large diameter trees	791	±	310
Total pubescent oak		97 070	±	6 070
Holm oak	Small diameter trees	19 197	±	2 052
	Medium diameter trees	5 309	±	1 142
	Large diameter trees	878	±	459
	Very large diameter trees	51 to 676		
Total holm oak		25 746	±	2 969
Beech	Small diameter trees	49 443	±	3 482
	Medium diameter trees	131 096	±	6 446
	Large diameter trees	59 865	±	3 657
	Very large diameter trees	21 294	±	2 242
Total beech		261 698	±	12 710
Chestnut	Small diameter trees	51 034	±	4 460
	Medium diameter trees	54 300	±	4 266
	Large diameter trees	8 832	±	1 215
	Very large diameter trees	7 424	±	1 767
Total chestnut		121 590	±	8 762
Hornbeam	Small diameter trees	57 245	±	3 148
	Medium diameter trees	33 522	±	2 023
	Large diameter trees	2 040	±	449
	Very large diameter trees	3 to 388		
Total hornbeam		93 003	±	4 655

Species	Diameter class (in cm)	1000 m³		
Birch	Small diameter trees	21 065	±	1 842
	Medium diameter trees	17 680	±	1 447
	Large diameter trees	785	±	265
	Very large diameter trees	0 to 128		
Total birch		39 548	±	2 824
Common ash	Small diameter trees	26 662	±	2 570
	Medium diameter trees	48 432	±	3 425
	Large diameter trees	11 455	±	1 441
	Very large diameter trees	2 192	±	735
Total common ash		88 741	±	6 051
Other broadleaved	Small diameter trees	107 754	±	4 258
	Medium diameter trees	120 817	±	5 162
	Large diameter trees	20 458	±	2 432
	Very large diameter trees	7 141	±	1 792
Total other broadleaved		256 171	±	9 528
Maritime pine	Small diameter trees	20 390	±	2 623
	Medium diameter trees	84 448	±	7 112
	Large diameter trees	29 799	±	3 675
	Very large diameter trees	4 032	±	1 242
Total maritime pine		138 669	±	10 994
Scots pine	Small diameter trees	28 335	±	2 654
	Medium diameter trees	99 202	±	6 361
	Large diameter trees	14 911	±	1 821
	Very large diameter trees	766	±	415
Total Scots pine		143 214	±	9 192
Austrian or Corsican pine	Small diameter trees	13 145	±	2 246
	Medium diameter trees	35 373	±	5 279
	Large diameter trees	7 401	±	1 848
	Very large diameter trees	2 349	±	1 536
Total Austrian or Corsican pine		58 268	±	8 419
Aleppo pine	Small diameter trees	3 017	±	768
	Medium diameter trees	9 630	±	1 740
	Large diameter trees	2 708	±	727
	Very large diameter trees	69 to 645		
Total Aleppo pine		15 713	±	2 796

Species	Diameter class (in cm)	1000 m³		
Silver fir	Small diameter trees	21 056	±	2 116
	Medium diameter trees	95 328	±	7 534
	Large diameter trees	46 992	±	4 294
	Very large diameter trees	17 340	±	2 580
Total silver fir		180 715	±	15 376
Common spruce	Small diameter trees	32 315	±	3 902
	Medium diameter trees	113 489	±	9 717
	Large diameter trees	32 768	±	3 561
	Very large diameter trees	6 143	±	1 408
Total common spruce		184 716	±	15 924
Larch	Small diameter trees	2 724	±	922
	Medium diameter trees	12 680	±	2 830
	Large diameter trees	4 458	±	1 345
	Very large diameter trees	1 215	±	958
Total larch		21 077	±	4 738
Douglas fir	Small diameter trees	13 314	±	2 062
	Medium diameter trees	62 728	±	7 945
	Large diameter trees	15 229	±	3 312
	Very large diameter trees	2 313	±	1 153
Total Douglas fir		93 584	±	12 161
Other conifers	Small diameter trees	6 526	±	1 611
	Medium diameter trees	22 237	±	3 985
	Large diameter trees	4 044	±	1 315
	Very large diameter trees	0 to 2 021		
Total other conifers		33 726	±	6 312
Total		**2 419 623**	±	**40 511**

Appendix XII

Version of the NFI cartographic database on stand types used per department and the corresponding year

Site	Year	Cartographic database version	Site	Year	Cartographic database version
Aisne	1999	1	Maine-et-Loire	1994	1
Allier	1997	1	Manche	1998	1
Alpes-de-Haute-Provence	1994	1	Marne	1995	1
Ariège	2001	1	Meurthe-et-Moselle	2001	1
Aude	1999	1	Meuse	2003	1
Aveyron	1990	1	Moselle	2001	1
Bas-Rhin	1997	1	Nord	1998	1
Bouches-du-Rhône	1997	1	Oise	1999	1
Calvados	1998	1	Orne	1998	1
Cantal	2000	1	Paris	2000	1
Charente	2002	1	Pas-de-Calais	1998	1
Charente-Maritime	2003	1	Puy-de-Dôme	2000	1
Corrèze	1999	1	Pyrénées-Atlantiques	1992	1
Corse-du-Sud	2000	1	Pyrénées-Orientales	1999	1
Côte-d'Or	2000	1	Rhône	1990	1
Côtes-d'Armor	2003	1	Saône-et-Loire	1999	1
Creuse	2000	1	Seine-et-Marne	2000	1
Dordogne	2000	1	Seine-Maritime	2000	1
Doubs	2000	1	Somme	1999	1
Eure	2000	1	Tarn	1987	1
Eure-et-Loir	2001	1	Tarn-et-Garonne	1998	1
Finistère	1993	1	Territoire de Belfort	2002	1
Gard	2000	1	Var	1995	1
Gers	1998	1	Vienne	1993	1
Gironde	1995	1	Vosges	2004	1
Haute-Corse	2000	1	Yonne	1996	1
Haute-Garonne	1996	1	Ain	2005	2
Haute-Loire	1999	1	Alpes-Maritimes	2004	2
Hautes-Alpes	1993	1	Ardèche	2007	2
Haute-Saône	2003	1	Ardennes	2005	2
Haute-Savoie	1995	1	Aube	2005	2
Haute-Vienne	2000	1	Cher	2005	2
Haut-Rhin	1997	1	Deux-Sèvres	2007	2
Hérault	2002	1	Drôme	2006	2
Ille-et-Vilaine	2003	1	Haute-Marne	2006	2
Indre-et-Loire	2002	1	Hautes-Pyrénées	2006	2
Isère	1993	1	Indre	2004	2
Jura	2000	1	Loire	2006	2
Landes	1997	1	Mayenne	2006	2
Loire-Atlantique	1996	1	Morbihan	2004	2
Loiret	2001	1	Nièvre	2007	2
Loir-et-Cher	2002	1	Sarthe	2005	2
Lot	1999	1	Savoie	2006	2
Lot-et-Garonne	1997	1	Vaucluse	2005	2
Lozère	2000	1	Vendée	2006	2

Appendix XIII

List of forest species, classified according to the categories of the IUCN Red Lists

Vascular plants		
1) species exclusively or very often found in forests		
Atlantic polystichum	*Dryopteris aemula*	-
crested fern	*Dryopteris cristata*	-
holly fern	*Polystichum braunii*	-
Mauritanian grass	*Ampelodesmos mauritanica*	-
Asperula taurinus	*Asperula taurina*	-
Cardamine chelidonia	*Cardamine chelidonia*	-
Fritillaria orientalis	*Fritillaria orientalis*	-
yellow star of Bethlehem	*Gagea lutea*	-
paeony	*Paeonia officinalis*	-
bladderseed	*Physospermum cornubiense*	-
chickweed wintergreen	*Trientalis europaea*	-
Vicia laeta	*Vicia laeta*	-
dwarf mountain pine	*Pinus mugo*	-
carob tree	*Ceratonia siliqua*	-
false Spanish cork oak	*Quercus crenata*	-
service tree of Fontainebleau	*Sorbus latifolia*	-
coralroot orchid	*Corallorhiza trifida*	NT
ghost orchid	*Epipogium aphyllum*	NT
Spitzel's orchid	*Orchis spitzelii*	VU
lady's slipper	*Cypripedium calceolus*	VU
2) species with mixed behaviour, found to an equal extent in forests and open areas		
monkshood	*Aconitus napellus subsp. corsicum*	-
palmate anemone	*Anemone palmata*	-
Bertoloni's columbine	*Aquilegia bertolonii*	-
European Michaelmas daisy	*Aster amellus*	-
Campanula cervicaria	*Campanula cervicaria*	-
mountain thistle	*Cirsium montanum*	-
Requien's delphinium	*Delphinium requienii*	-
Ligurian gentian	*Gentiana ligustica*	-
Hdysarum boutignyanum	*Hedysarum boutignyanum*	-
Haller's pasque flower	*Pulsatilla halleri*	-
Senecio ruthenensis	*Senecio ruthenensis*	-
Jupiter's beard	*Anthyllis barba-jovis*	-
dwarf birch	*Betula nana*	-
Mediterranean dwarf palm	*Chamaerops humilis*	-
crispy-leaved rockrose	*Cistus crispus*	-
poplar leaved rockrose	*Cistus populifolius*	-
alpine clematis	*Clematis alpina*	-
ardoin broom	*Cytisus ardoini*	-
Cytisus sauzeanus	*Cytisus sauzeanus*	-
Echinospartum horridum	*Echinospartum horridum*	-
needle-leaved broom	*Genista linifolia subsp. linifolia*	-
Swiss willow	*Salix helvetica*	-
shrubby germander	*Teucrium fruticans*	-
wild grapevine	*Vitis vinifera subsp. sylvestris*	-
short-spurred fragrant orchid	*Gymnadenia odoratissima*	VU
early-marsh orchid	*Dactylorhiza incarnata*	VU
western-marsh orchid	*Dactylorhiza majalis*	NT
three-toothed orchid	*Neotinea tridentata*	NT
tongue orchid	*Serapias lingua*	NT

Note. While awaiting a revision of the national red lists for plant species, we focused only on species that are protected throughout France. We therefore do not specify the extent to which species are threatened since the criteria are different (cf. § 4.8), except for orchids for which a red list was published in 2010 (cf. hereafter: sources).

Mammals		
1) species exclusively or very often found in forests		
brown bear	*Ursus arctos*	CR
lynx	*Lynx lynx*	EN
Bechstein's bat	*Myotis bechsteini*	NT
lesser noctule	*Nyctalus leisleri*	NT
Brandt's bat	*Myotis brandti*	LC
Geoffrey's bat	*Myotis emarginatus*	LC
western barbastelle	*Barbastella barbastellus*	LC
large mouse-eared bat	*Myotis myotis*	LC
Alcathoe's bat	*Myotis alcathoe*	LC
Natterer's bat	*Myotis nattereri*	LC
long-eared bat	*Plecotus auritus*	LC
Eurasian red squirrel	*Sciurus vulgaris*	LC
pine marten	*Martes martes*	LC
2) species with mixed behaviour, found to an equal extent in forests and open areas		
Felten's myotis	*Myotis punicus*	VU
common noctule	*Nyctalus noctula*	NT
Mediterranean horseshoe bat	*Rhinolophus euryale*	NT
greater horseshoe bat	*Rhinolophus ferrumequinum*	NT
lesser white-toothed shrew	*Crocidura suaveolens*	NT
Pyrenean desman	*Galemys pyrenaicus*	NT
European rabbit	*Oryctolagus cuniculus*	NT
Nathusius' pipistrelle	*Pipistrellus nathusii*	NT
lesser horsesoe bat	*Rhinolophus hipposideros*	LC
northern bat	*Eptesicus nilssoni*	LC
crowned shrew	*Sorex coronatus*	LC
pygmy shrew	*Sorex minutus*	LC
Eurasian water shrew	*Neomys fodiens*	LC
Etruscan shrew	*Suncus etruscus*	LC
Eurasian beaver	*Castor fiber*	LC
garden dormouse	*Eliomys quercinus*	LC
edible dormouse	*Glis glis*	LC
hazel dormouse	*Muscardinus avellanarius*	LC
bank vole	*Clethrionomys glareolus*	LC
yellow-necked field mouse	*Apodemus flavicollis*	LC
wood mouse	*Apodemus sylvaticus*	LC
house mouse	*Mus musculus*	LC
roof rat	*Rattus rattus*	LC
European hare	*Lepus europaeus*	LC
Daubenton's bat	*Myotis daubentonii*	LC
European otter	*Lutra lutra*	LC
Eurasian badger	*Meles meles*	LC
European polecat	*Mustela putorius*	LC
common genet	*Genetta genetta*	LC
wildcat	*Felis sylvestris*	LC
common wild boar	*Sus scrofa*	LC
European roe deer	*Capreolus capreolus*	LC
red deer	*Cervus elaphus*	LC
common shrew	*Sorex araneus*	DD
Alpine shrew mouse	*Sorex alpinus*	DD
parti-coloured bat	*Vespertilio murinus*	DD
Escalera's bat	*Myotis escalerai*	DD
greater noctule	*Nyctalus lasiopterus*	DD

Birds		
1) species exclusively or very often found in forests		
black stork	Ciconia nigra	EN
booted eagle	Aquila pennata	VU
hazel grouse	Bonasa bonasia	VU
capercaillie	Tetrao urogallus	VU
pygmy owl	Glaucidium passerinum	VU
grey-headed woodpecker	Picus canus	VU
white-backed woodpecker	Dendrocopos leucotos	VU
wood warbler	Phylloscopus sibilatrix	VU
bullfinch	Pyrrhula pyrrhula	VU
willow warbler	Phylloscopus trochilus	NT
coal tit	Parus ater	NT
Corsican nuthatch	Sitta whiteheadi	NT
siskin	Carduelis spinus	NT
northern goshawk	Accipiter gentilis	LC
tawny owl	Strix aluco	LC
long-eared owl	Asio otus	LC
Tengmalm's owl	Aegolius funereus	LC
black woodpecker	Dryocopus martius	LC
great spotted woodpecker	Dendrocopos major	LC
middle spotted woodpecker	Dendrocopos medius	LC
lesser spotted woodpecker	Dendrocopos minor	LC
tree pipit	Anthus trivialis	LC
wren	Troglodytes troglodytes	LC
goldcrest	Regulus regulus	LC
firecrest	Regulus ignicapilla	LC
collared flycatcher	Ficedula albicollis	LC
pied flycatcher	Ficedula hypoleuca	LC
long-tailed tit	Aegithalos caudatus	LC
marsh tit	Parus palustris	LC
willow tit	Parus montanus	LC
crested tit	Parus cristatus	LC
blue tit	Parus caeruleus	LC
European nuthatch	Sitta europaea	LC
Eurasian treecreeper	Certhia familiaris	LC
golden oriole	Oriolus oriolus	LC
Eurasian jay	Garrulus glandarius	LC
nutcracker	Nucifraga caryocatactes	LC
chaffinch	Fringilla coelebs	LC
common crossbill	Loxia curvirostra	LC
three-towed woodpecker	Picoides tridactylus	DD
2) species with mixed behaviour, found to an equal extent in forests and open areas		
lesser grey shrike	Lanius minor	CR
black-shouldered kite	Elanus caeruleus	EN
spectacled warbler	Sylvia conspicillata	EN
red kite	Milvus milvus	VU
osprey, bald buzzard	Pandion haliaetus	VU
Iberian chiffchaff	Phylloscopus ibericus	VU
spotted flycatcher	Muscicapa striata	VU
southern grey shrike	Lanius meridionalis	VU
great spotted cuckoo	Clamator glandarius	NT
wryneck	Jynx torquilla	NT
roller	Coracias garrulus	NT
honey buzzard	Pernis apivorus	LC
European sparrowhawk	Accipiter nisus	LC
common buzzard	Buteo buteo	LC
hobby	Falco subbuteo	LC
black grouse	Tetrao tetrix	LC
woodcock	Scolopax rusticola	LC
stock dove	Columba oenas	LC
turtle dove	Streptopelia turtur	LC
common cuckoo	Cuculus canorus	LC
scops owl	Otus scops	LC
eagle owl	Bubo bubo	LC
European nightjar	Caprimulgus europaeus	LC
hoopoe	Upupa epops	LC
green woodpecker	Picus viridis	LC
hedge accentor	Prunella modularis	LC
robin	Erithacus rubecula	LC
nightingale	Luscinia megarhynchos	LC
common redstart	Phoenicurus phoenicurus	LC
blackbird	Turdus merula	LC
song thrush	Turdus philomelos	LC
mistle thrush	Turdus viscivorus	LC
lesser whitethroat	Sylvia curruca	LC
garden warbler	Sylvia borin	LC
blackcap	Sylvia atricapilla	LC
Bonelli's warbler	Phylloscopus bonelli	LC
chiffchaff	Phylloscopus collybita	LC
great tit	Parus major	LC
short-toed treecreeper	Certhia brachydactyla	LC
red-backed shrike	Lanius collurio	LC
common starling	Sturnus vulgaris	LC
greenfinch	Carduelis chloris	LC
hawfinch	Coccothraustes coccothraustes	LC
short-toed eagle	Circaetus gallicus	LC
scarlet grosbeak	Carpodacus erythrinus	NA

Reptiles		
1) species exclusively or very often found in forests: none		
2) species with mixed behaviour, found to an equal extent in forests and open areas		
meadow viper	Vipera ursinii	CR
Hermann's tortoise	Testudo hermanni	VU
Bedriaga's rock lizard	Archaeolacerta bedriagae	NT
sand lizard	Lacerta agilis	LC
common or viviparous lizard	Zootoca vivipara	LC
aesculapian snake	Zamenis longissimus	LC
grass snake	Natrix natrix	LC

Amphibians		
1) species exclusively or very often found in forests : none		
2) species with mixed behaviour, found to an equal extent in forests and open areas		
Pyrenean frog	Rana pyrenaica	EN
fire-belly toad	Bombina variegata	VU
Pyrenean brook salamander	Calotriton asper	NT
European tree frog	Hyla arborea	LC
alpine newt	Ichthyosaura alpestris	LC
agile frog	Rana dalmatina	LC
European common frog	Rana temporaria	LC
fire salamander	Salamandra salamandra	LC
marbled newt	Triturus marmoratus	LC

Sources: Flore forestière française, IDF, 1989, 1993, 2008; Red list of threatened species in France:
Chapter Orchidées de France métropolitaine, IUCN France, MNHN, FCBN & SFO (2010);
Chapter Mammifères de France métropolitaine, IUCN France, MNHN, SFEPM & ONCFS (2009);
Chapter Oiseaux nicheurs de France métropolitaine, IUCN France, MNHN, LPO, SEOF & ONCFS (2008);
Chapter Reptiles et Amphibiens de France métropolitaine, IUCN France, MNHN & SHF (2009).

Appendix XIV

Appendix to Indicator 2.1 – Variations in atmospheric deposition under the forest canopy (throughfall) in the RENECOFOR network

Placette	Période	Dépôt annuel moyen												Pluviosité moyenne sous couvert
		H+	Cl	S-SO4	N-NO3	Na	N-NH4	K	Mg	Ca	Fe	Al	Mn	
		g/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	g/ha	g/ha	g/ha	mm
CHP 40	t1: 1993-1998	22.2	59.4	10.9	2.4	30.5	3.0	39.3	6.0	12.9	64	103	377	845
CHP 40	t2: 1999-2003	12.1	55.6	9.0	2.4	28.6	4.2	39.3	5.7	12.1	105	93	443	811
CHP 40	t3: 2004-2007	11.5	47.8	7.3	2.7	23.1	3.2	41.7	5.1	9.5	55	96	659	616
	variation t3-t2	-4.4%	-14.0%	-19.5%	9.3%	-19.4%	-22.4%	6.1%	-11.3%	-21.4%	-47.8%	3.5%	48.7%	-24.1%
	variation t3-t1	-48.1%	-19.5%	-33.3%	8.8%	-24.4%	7.0%	6.1%	-14.8%	-26.0%	-14.4%	-6.5%	75.0%	-27.1%
CHP 59	t1: 1993-1998	60.2	24.7	13.2	2.7	12.0	8.8	34.2	4.3	11.4	80	102	1 285	738
CHP 59	t2: 1999-2003	30.1	22.9	9.5	2.9	10.6	11.9	43.3	4.2	9.9	120	96	1 229	850
CHP 59	t3: 2004-2007	28.7	24.5	7.7	2.5	11.9	6.6	37.2	4.1	8.9	77	109	1 320	720
	variation t3-t2	-4.7%	7.4%	-19.4%	-12.7%	12.3%	-44.7%	-14.1%	-1.9%	-9.7%	-35.3%	13.7%	7.5%	-15.3%
	variation t3-t1	-52.3%	-0.7%	-41.9%	-8.5%	-0.5%	-25.4%	8.7%	-4.6%	-21.6%	-3.3%	6.7%	2.8%	-2.4%
CHS 35	t1: 1993-1998	13.1	35.7	7.4	2.8	16.9	8.1	25.8	3.4	6.1	68	73	1 611	590
CHS 35	t2: 1999-2003	8.6	32.6	5.1	2.4	15.7	7.0	24.7	3.2	6.2	95	58	1 473	637
CHS 35	t3: 2004-2007	10.5	32.2	4.3	2.8	14.9	7.7	29.1	3.6	4.7	58	64	2 034	533
	variation t3-t2	19.6%	-1.2%	-16.5%	19.1%	-5.5%	9.8%	17.5%	13.4%	-24.5%	-38.7%	10.4%	38.1%	-16.3%
	variation t3-t1	-19.5%	-9.7%	-42.9%	0.5%	-12.2%	-5.3%	12.7%	5.2%	-22.6%	-14.3%	-13.0%	26.2%	-9.7%
CHS 41	t1: 1993-1998	19.9	19.2	5.5	2.5	7.5	3.0	19.8	2.1	8.6	66	80	1 564	524
CHS 41	t2: 1999-2003	13.5	16.0	3.7	2.6	7.2	3.5	18.6	2.2	7.9	74	59	1 226	634
CHS 41	t3: 2004-2007	12.1	15.3	2.9	2.0	6.5	4.3	19.2	2.6	6.1	34	55	1 504	433
	variation t3-t2	-10.2%	-4.4%	-23.5%	-28.8%	-9.8%	21.4%	2.3%	21.0%	-22.8%	-53.9%	-7.5%	22.7%	-31.7%
	variation t3-t1	-39.4%	-20.4%	-47.8%	-19.9%	-13.2%	45.5%	-2.8%	23.7%	-28.6%	-48.5%	-31.4%	-3.8%	-17.3%
CPS 77	t1: 1993-1998	19.3	18.8	7.1	2.9	7.1	4.6	21.1	2.6	12.4	74	109	2 008	509
CPS 77	t2: 1999-2003	10.3	15.9	4.7	3.1	6.3	5.1	19.6	2.9	11.3	126	107	1 937	552
CPS 77	t3: 2004-2007	11.1	13.9	3.4	2.9	5.9	3.8	13.7	2.9	9.5	52	70	1 314	397
	variation t3-t2	7.3%	-12.5%	-26.5%	-6.3%	-6.4%	-24.6%	-30.1%	0.0%	-24.3%	-58.6%	-34.0%	-32.2%	-28.1%
	variation t3-t1	-42.5%	-26.2%	-52.4%	-2.5%	-16.1%	-17.5%	-35.1%	11.9%	-31.3%	-29.6%	-35.2%	-34.6%	-22.0%
DOU 71	t1: 1993-1998	152.7	23.3	9.5	9.3	13.9	5.2	13.0	3.1	8.8	43	168	697	1 179
DOU 71	t2: 1999-2003	76.6	22.3	6.9	9.0	12.9	5.4	12.4	3.2	8.0	77	160	627	1 122
DOU 71	t3: 2004-2007	107.1	21.4	5.5	8.3	12.7	4.4	12.5	3.0	7.2	37	233	704	959
	variation t3-t2	39.7%	-4.1%	-20.1%	-8.1%	-1.5%	-19.4%	0.8%	-7.1%	-10.6%	-52.4%	45.5%	-14.9%	-14.5%
	variation t3-t1	-29.9%	-8.2%	-42.1%	-10.2%	-8.9%	-15.7%	-4.1%	-5.5%	-18.1%	-15.3%	38.9%	1.0%	-18.6%
EPC 08	t1: 1993-1998	389.4	34.1	24.7	12.2	17.6	11.6	32.2	2.9	15.0	145	329	2 158	947
EPC 08	t2: 1999-2003	158.5	29.2	14.3	10.3	15.7	9.2	23.8	2.9	9.4	164	484	1 846	1 106
EPC 08	t3: 2004-2007	107.3	30.5	11.3	7.3	16.1	7.9	25.0	2.9	8.0	86	373	1 524	1 017
	variation t3-t2	-32.3%	4.6%	-20.8%	-29.1%	2.4%	-14.1%	5.3%	2.0%	-15.5%	-47.7%	-23.0%	-17.4%	-8.2%
	variation t3-t1	-72.4%	-10.6%	-54.3%	-40.1%	-8.7%	-32.4%	-22.3%	1.4%	-46.7%	-40.9%	13.2%	-29.4%	7.3%
EPC 63	t1: 1993-1998	46.8	16.2	6.4	4.8	7.5	2.9	13.7	2.7	9.1	74	304	655	537
EPC 63	t2: 1999-2003	29.2	16.0	4.2	4.4	8.1	2.6	12.9	2.6	6.9	103	236	570	508
EPC 63	t3: 2004-2007	39.9	16.3	4.1	4.7	8.7	2.8	16.4	2.6	8.1	89	241	611	686
	variation t3-t2	35.5%	2.0%	-3.6%	5.8%	8.1%	7.0%	26.8%	1.3%	17.3%	-17.7%	1.9%	7.3%	35.1%
	variation t3-t1	-15.3%	0.8%	-35.9%	-3.3%	15.7%	-5.0%	19.6%	-3.1%	-11.0%	13.9%	-20.8%	-6.7%	27.8%
EPC 74	t1: 1993-1998	133.3	7.7	7.2	6.0	2.9	4.4	14.6	1.4	10.9	101	201	200	861
EPC 74	t2: 1999-2003	72.6	7.5	5.0	7.3	3.0	5.3	13.2	1.5	10.8	127	201	208	1 004
EPC 74	t3: 2004-2007	64.0	7.8	4.5	6.9	3.3	6.7	15.6	1.6	10.9	108	192	262	985
	variation t3-t2	-11.8%	3.7%	-9.6%	-5.2%	7.7%	26.7%	18.0%	6.2%	0.6%	-14.7%	-4.2%	26.0%	-2.0%
	variation t3-t1	-52.0%	1.2%	-37.9%	14.1%	13.4%	52.5%	6.8%	14.1%	-0.3%	7.1%	-4.3%	31.3%	14.4%
EPC 87	t1: 1993-1998	44.5	27.8	7.0	4.6	14.1	3.2	23.0	3.0	6.5	34	195	314	809
EPC 87	t2: 1999-2003	24.6	27.7	6.2	5.3	14.0	4.4	26.5	3.1	7.0	90	212	351	784
EPC 87	t3: 2004-2007	53.0	25.5	5.2	5.8	13.1	3.3	22.4	3.0	6.6	59	240	400	836
	variation t3-t2	115.5%	-8.1%	-16.2%	8.2%	-6.0%	-26.0%	-15.5%	-4.4%	-4.6%	-34.8%	13.2%	14.0%	6.7%
	variation t3-t1	19.0%	-8.2%	-25.3%	24.9%	-6.8%	3.7%	-2.9%	-0.5%	2.9%	70.6%	23.0%	27.4%	3.4%
HET 30	t1: 1993-1998	288.8	38.1	18.4	8.6	21.9	7.0	26.5	3.9	20.6	58	399	619	2 450
HET 30	t2: 1999-2003	130.7	32.4	12.8	8.5	19.0	7.4	17.3	3.6	19.7	149	176	607	2 036
HET 30	t3: 2004-2007	60.5	26.5	10.9	8.0	15.4	6.4	17.2	3.0	22.3	45	219	517	1 670
	variation t3-t2	-53.7%	-18.2%	-15.1%	-5.5%	-18.9%	-13.5%	-0.5%	-15.9%	12.9%	-69.6%	24.6%	-14.9%	-18.0%
	variation t3-t1	-79.1%	-30.4%	-41.1%	-6.5%	-29.5%	-8.6%	-35.2%	-23.4%	8.2%	-21.6%	-45.1%	-16.5%	-31.8%
HET 64	t1: 1993-1998	43.5	33.3	11.4	5.2	17.1	4.6	20.5	3.4	13.1	20	111	398	906
HET 64	t2: 1999-2003	19.1	27.7	9.1	5.0	13.9	4.3	19.0	2.8	10.7	54	74	394	914
HET 64	t3: 2004-2007	22.0	27.2	8.4	4.9	13.9	4.0	19.5	2.8	10.0	21	94	505	853
	variation t3-t2	15.3%	-1.8%	-7.6%	-0.4%	0.2%	-5.2%	2.3%	0.5%	-6.6%	-60.0%	26.2%	31.5%	-6.6%
	variation t3-t1	-49.5%	-18.2%	-26.1%	-4.3%	-18.4%	-11.8%	-5.0%	-15.2%	-24.0%	5.0%	-15.6%	26.9%	-5.8%
PL 20	t1: 1993-1998	93.9	112.3	12.4	3.9	64.0	0.9	12.7	9.4	20.2	67	662	455	1 095
PL 20	t2: 1999-2003	51.8	99.1	10.5	3.9	56.0	0.8	12.7	8.7	21.2	124	596	340	1 059
PL 20	t3: 2004-2007	46.8	106.1	9.9	4.0	58.4	0.8	14.5	9.1	19.6	121	750	389	845
	variation t3-t2	-9.6%	7.0%	-5.9%	1.3%	4.3%	10.0%	14.4%	5.0%	-7.5%	-2.1%	26.2%	14.2%	-20.2%
	variation t3-t1	-50.1%	-5.6%	-20.3%	0.5%	-8.7%	-2.4%	13.7%	-3.8%	-2.6%	81.9%	13.2%	-14.6%	-22.8%
PM 17	t1: 1993-1998	73.0	114.1	9.2	3.7	64.7	2.1	9.8	9.1	10.3	25	85	129	574
PM 17	t2: 1999-2003	97.1	142.6	10.0	3.6	78.6	2.3	7.5	10.7	11.4	55	95	133	717
PM 17	t3: 2004-2007	76.4	141.3	9.6	4.7	77.7	2.8	8.0	10.8	11.8	40	101	143	576
	variation t3-t2	-21.3%	-0.9%	-4.1%	29.4%	-1.1%	17.8%	6.6%	1.0%	4.2%	-27.3%	6.4%	7.1%	-19.6%
	variation t3-t1	4.7%	23.9%	4.7%	25.9%	20.2%	34.4%	-18.8%	18.2%	14.8%	58.0%	18.3%	11.0%	0.4%
PM 40c	t1: 1993-1998	43.4	39.5	7.2	2.1	21.2	1.7	17.2	5.6	10.0	30	215	78	683
PM 40c	t2: 1999-2003	60.6	39.2	5.3	2.8	19.4	2.4	13.2	5.0	10.5	71	238	91	629

Placette	Période	Dépôt annuel moyen												Pluviosité moyenne sous couvert
		H+	Cl	S-SO4	N-NO3	Na	N-NH4	K	Mg	Ca	Fe	Al	Mn	
		g/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	kg/ha	g/ha	g/ha	g/ha	mm
PM 40c	t3: 2004-2007	76.6	36.2	4.4	3.0	16.5	2.7	13.9	4.8	9.7	58	300	91	590
	variation t3-t2	26.5%	-7.8%	-15.7%	7.2%	-15.1%	13.3%	5.3%	-4.5%	-6.9%	-18.8%	20.2%	-0.1%	-6.3%
	variation t3-t1	76.4%	-8.5%	-38.5%	45.5%	-22.3%	58.5%	-19.0%	-14.2%	-2.9%	94.7%	39.7%	17.1%	-13.7%
PM 72	t1: 1993-1998	38.3	30.6	7.0	5.3	15.8	6.4	12.1	2.9	6.9	27	97	304	611
PM 72	t2: 1999-2003	22.6	35.1	6.1	6.1	18.3	9.2	12.4	3.3	6.9	68	114	433	730
PM 72	t3: 2004-2007	16.3	36.9	4.8	6.1	18.7	9.2	12.7	3.3	6.3	57	191	498	542
	variation t3-t2	-27.6%	5.0%	-21.0%	0.1%	2.4%	0.5%	2.2%	-0.6%	-7.8%	-15.9%	67.9%	14.8%	-25.8%
	variation t3-t1	-57.3%	20.6%	-31.4%	15.4%	18.4%	9.6%	4.3%	16.6%	-7.7%	110.1%	96.5%	63.5%	-11.3%
PM 85	t1: 1993-1998	42.3	235.1	15.9	6.4	128.8	7.0	14.0	17.7	15.4	45	63	82	508
PM 85	t2: 1999-2003	66.2	239.0	15.3	4.4	133.4	3.7	15.7	17.8	12.9	77	71	112	591
PM 85	t3: 2004-2007	66.1	204.9	12.8	4.6	120.7	2.7	13.0	15.4	10.8	58	77	69	466
	variation t3-t2	2.8%	-14.3%	-16.4%	5.4%	-9.5%	-27.0%	-16.8%	-13.5%	-15.8%	-24.5%	8.7%	-38.1%	-17.4%
	variation t3-t1	60.9%	-12.8%	-19.9%	-26.0%	-6.3%	-62.1%	-7.1%	-13.1%	-29.9%	28.7%	23.0%	-16.1%	-3.9%
PS 44	t1: 1993-1998	79.6	83.4	10.5	3.9	45.2	8.0	19.2	6.4	7.2	45	246	180	594
PS 44	t2: 1999-2003	73.5	80.9	8.4	3.5	43.5	6.5	19.2	6.1	6.4	74	219	219	701
PS 44	t3: 2004-2007	46.4	70.8	6.9	4.3	37.6	9.3	13.5	4.5	4.9	59	203	159	556
	variation t3-t2	-36.9%	-12.5%	-17.6%	22.1%	-13.6%	44.0%	-29.5%	-25.1%	-23.9%	-19.9%	-7.3%	-27.5%	-20.3%
	variation t3-t1	-41.7%	-15.2%	-34.4%	8.7%	-16.8%	16.3%	-29.4%	-29.0%	-32.1%	30.8%	-17.3%	-11.4%	-6.0%
PS 67a	t1: 1993-1998	165.1	12.6	10.8	7.3	5.2	8.2	17.5	1.9	9.4	60	336	1 672	508
PS 67a	t2: 1999-2003 (sauf 2000)	96.2	12.2	8.2	6.8	5.7	10.4	11.9	1.4	6.3	68	176	868	589
PS 67a	t3: 2004-2007	65.6	9.1	4.1	4.9	4.6	5.5	8.0	1.4	4.9	30	329	810	507
	variation t3-t2	-31.1%	-25.6%	-33.3%	-28.1%	-17.2%	-47.3%	-32.7%	0.7%	-22.1%	-55.2%	86.7%	-6.7%	-14.0%
	variation t3-t1	-60.2%	-28.1%	-61.8%	-32.4%	-7.9%	-32.8%	-54.4%	-27.5%	-47.3%	-49.5%	-2.1%	-51.6%	-0.2%
PS 76	t1: 1993-1998	665.0	90.8	34.9	5.7	49.8	6.3	27.3	7.6	17.4	108	907	2 516	587
PS 76	t2: 1999-2003	282.1	63.1	17.9	6.2	35.4	7.4	14.6	5.3	10.1	84	344	1 262	692
PS 76	t3: 2004-2007	164.9	63.6	14.2	5.6	34.4	7.6	15.7	5.3	9.6	51	263	1 507	593
	variation t3-t2	-41.5%	0.8%	-21.0%	-9.0%	-3.0%	3.1%	7.1%	-0.9%	-4.7%	-39.2%	-23.5%	19.5%	-14.2%
	variation t3-t1	-75.9%	-30.0%	-59.4%	-2.0%	-30.9%	20.6%	-42.5%	-30.0%	-44.8%	-52.5%	-71.0%	-40.1%	1.1%
SP 05	t1: 1993-1998	4.3	6.0	4.5	0.3	1.6	0.4	29.8	2.0	12.9	54	249	89	622
SP 05	t2: 1999-2003	2.9	5.4	3.9	0.7	1.6	0.8	31.4	2.3	14.0	72	236	106	611
SP 05	t3: 2004-2007	1.3	4.5	2.4	0.5	1.1	0.4	27.0	1.7	11.4	71	196	154	366
	variation t3-t2	-55.6%	-18.0%	-40.2%	-29.8%	-26.8%	-52.8%	-14.1%	-24.2%	-18.5%	-1.8%	-17.2%	45.0%	-36.8%
	variation t3-t1	-70.2%	-25.5%	-48.1%	64.4%	-29.7%	-14.7%	-9.6%	-13.7%	-11.8%	31.4%	-21.5%	73.0%	-37.9%
SP 11	t1: 1993-1998	55.1	25.0	11.2	4.4	12.7	2.5	30.3	2.8	15.3	107	230	235	826
SP 11	t2: 1999-2002	27.1	26.4	9.1	3.6	13.2	2.2	36.9	2.9	13.6	137	269	265	827
SP 11	t3: 2004-2007	19.0	26.7	7.4	3.6	12.9	1.9	43.7	2.8	12.4	121	314	245	863
	variation t3-t2	-30.1%	1.1%	-19.4%	-2.1%	-2.5%	-17.3%	18.3%	-4.2%	-8.9%	-12.1%	21.5%	-3.8%	4.4%
	variation t3-t1	-65.6%	7.0%	-34.1%	-18.5%	1.2%	-26.3%	44.2%	0.6%	-18.9%	13.0%	36.9%	4.5%	4.5%
SP 25	t1: 1993-1998	100.0	14.9	9.0	6.5	6.9	5.2	24.3	2.0	12.4	74	255	407	1 229
SP 25	t2: 1999-2003	110.6	14.9	7.0	6.9	7.2	4.6	19.1	2.1	12.6	143	147	378	1 523
SP 25	t3: 2004-2007	40.2	14.5	5.5	6.1	7.3	4.1	21.6	2.2	12.2	66	186	439	1 318
	variation t3-t2	-63.6%	-2.3%	-20.6%	-11.3%	1.0%	-11.9%	13.1%	0.9%	-3.1%	-54.3%	26.9%	16.1%	-13.5%
	variation t3-t1	-59.8%	-2.9%	-38.8%	-5.7%	6.0%	-22.5%	-10.8%	7.8%	-1.3%	-11.9%	-27.0%	7.9%	7.2%
SP 38	t1: 1993-1998	71.1	6.1	6.4	1.7	1.7	1.9	19.2	0.9	7.4	57	159	828	1 003
SP 38	t2: 1999-2003	32.3	5.8	5.3	1.7	1.8	1.9	19.5	1.5	8.3	87	162	1 147	1 107
SP 38	t3: 2004-2007	28.2	5.8	4.3	2.1	2.2	2.3	18.0	1.6	7.9	47	219	1 117	981
	variation t3-t2	-12.7%	0.1%	-18.7%	24.7%	26.3%	19.4%	-7.5%	8.1%	-4.8%	-45.8%	35.2%	-2.6%	-11.4%
	variation t3-t1	-60.3%	-4.4%	-32.7%	24.1%	28.3%	21.1%	-6.3%	72.5%	7.0%	-16.8%	38.1%	34.9%	-2.2%
SP 57	t1: 1993-1998	158.8	13.8	11.2	5.4	5.5	3.7	23.1	1.1	7.8	58	207	3 147	734
SP 57	t2: 1999-2003	91.4	12.6	6.9	5.3	5.5	3.7	19.0	1.4	7.2	95	151	2 369	811
SP 57	t3: 2004-2007	85.5	14.0	6.1	4.6	6.8	2.2	20.1	1.9	6.2	75	186	2 428	716
	variation t3-t2	-6.4%	10.7%	-12.7%	-13.2%	23.3%	-41.6%	5.6%	39.1%	-13.7%	-21.4%	23.6%	2.5%	-11.8%
	variation t3-t1	-46.2%	1.2%	-46.1%	-13.8%	24.0%	-40.9%	-13.0%	68.0%	-20.5%	28.7%	-9.9%	-22.8%	-2.5%
SP 68	t1: 1993-1998	93.4	10.1	6.0	4.2	4.7	3.0	18.3	1.6	5.8	47	222	190	657
SP 68	t2: 1999-2003	53.2	8.6	4.4	6.0	4.0	3.6	17.4	1.4	5.8	69	190	247	755
SP 68	t3: 2004-2007	46.8	9.6	3.9	5.6	4.7	4.0	21.8	1.6	5.4	47	177	314	709
	variation t3-t2	-13.8%	12.0%	-11.2%	-6.1%	16.7%	9.6%	25.2%	16.8%	-7.1%	-32.2%	-7.3%	27.3%	-6.1%
	variation t3-t1	-50.9%	-4.5%	-34.6%	32.7%	-1.4%	34.4%	18.9%	1.8%	-7.4%	-0.7%	-20.4%	65.0%	8.0%
Moyenne	t1: 1993-1998	110.6	42.3	10.9	4.8	22.3	4.9	21.5	4.1	11.1	62	230	844	807
Moyenne	t2: 1999-2003	63.6	41.9	8.0	4.8	22.3	5.0	20.1	4.1	10.3	96	191	733	858
Moyenne	t3: 2004-2007	50.3	39.7	6.6	4.6	21.1	4.5	20.0	4.0	9.4	62	211	756	745
	variation t3-t2	-20.8%	-5.3%	-17.1%	-5.2%	-5.1%	-10.2%	-0.1%	-3.7%	-8.6%	-35.5%	10.5%	3.4%	-13.1%
	variation t3-t1	-54.6%	-6.2%	-39.2%	-5.9%	-5.1%	-7.8%	-7.0%	-3.1%	-15.6%	0.7%	-8.5%	-10.2%	-7.6%

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