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The European Fire Database Technical specifications and data submission
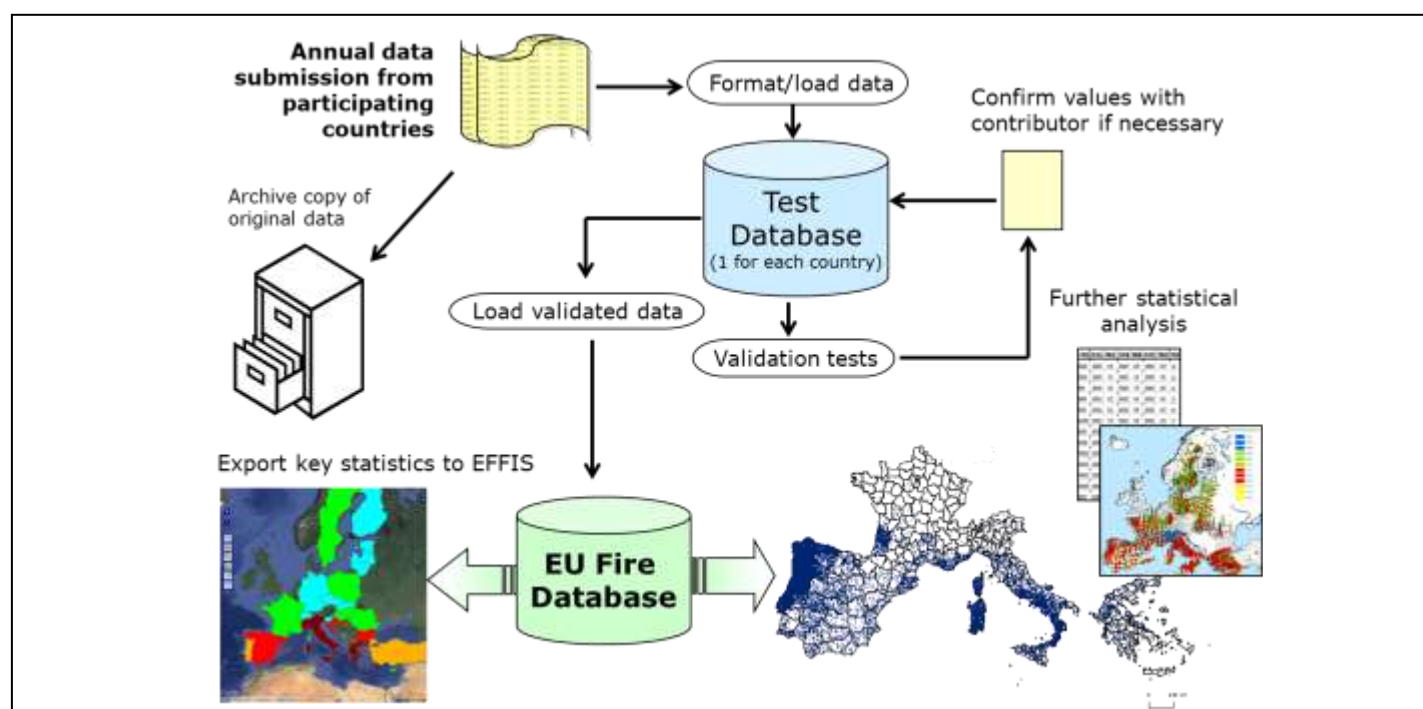
Executive report

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Joint Research Centre

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The European Fire Database Technical specifications and data submission

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Abstract

The European Fire Database is an important component of the European Forest Fire Information System (EFFIS), the EC focal point of information on forest fires established by the Joint Research Centre (JRC) and the Directorate General for Environment to provide up to date and harmonized information on forest fires in Europe. As of 2014 EFFIS is part of the Forest Information System for Europe (FISE), following the new EU Forest Strategy adopted in 2013.

The Fire Database is the largest repository of information on individual fire events in Europe and is the end product of a long collaboration between European countries and the European Commission on forest fires.

It contains forest fire information compiled by member countries of the EFFIS network. Fire data provided each year by national authorities are checked, stored and managed by JRC within the fire database.

Each country has its own internal rules of reporting on individual fire events which is in most cases done mainly for administrative purposes. To widen the exploitation potential of the national fire data within the European Fire Database and to enhance data harmonization and data quality control, the common data set up has been gradually modified over the years.

A common and in depth understanding of latest definitions and data specifications is of paramount importance. This report intends contributing to these efforts illustrating in detail the data stored in the European Fire Database, their definitions, the formats required for country data submission and the process of data validation and storage carried out at JRC.

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Background and scope

The European Forest Fire Information System (EFFIS) was established jointly by the European Commission (EC) services Joint Research Centre (JRC) and Directorate General for Environment in the year 2000 to support the national services in charge of the protection of forests against fires in the EU and neighbouring countries, and also to provide the EC services and the European Parliament with up to date and harmonized information on forest fires in Europe. As of 2014 EFFIS is part of the Forest Information System for Europe (FISE), following the new EU Forest Strategy adopted in 2013[1].

Several initiatives have been undertaken by the EC in agreement with national administrations to improve the protection of the Community forests against fires, and since 1979 several Regulations have been adopted on this issue. Among them the Council Regulations (EEC) No 2158/92 and (EEC) No 804/94 supported the creation of forest fire information systems in the countries to monitor and evaluate the effectiveness of the measures taken at the European level. To this end the countries were to make available to the EC a minimum common set of data on forest fires. Thus a first fire database, named the Common Core Database was established, in order to collect information on forest fires and their causes and to improve the understanding of forest fires and their prevention. Detailed rules for the setting up of the database were given, and the systematic collection of a core set of data on each fire event began, covering at that time the six Member States of the Union that were participating in the system: Germany, Portugal, Spain, France, Italy and Greece. Regulation 2158/92 was renewed for five years in 1997 and expired in December 2002.

The Regulation (EC) No 2152/2003 (Forest Focus Regulation) was built on the achievements of the two previous Council Regulations on the protection of Community's forests against atmospheric pollution and on forest fires. According to the implementing rules of the Forest Focus Regulation, monitoring of forest fires in Europe continued to be recorded in order to collect comparable information on forest fires at Community level.

Since 2004 the forest fire data provided each year by individual EU Member States and other European countries have been checked, stored and managed by the JRC within EFFIS. The information previously stored in the Common Core database was also transferred to the new database which is now known as the European Fire Database.

Countries submitting fire data annually to the database have been gradually increasing in number, from 6 countries contributing to the original Common Core database to 26 countries in 2013, including 4 countries of North Africa and Middle East who started to submit data to the Database in 2012. It is important to note that data are submitted on a voluntary basis; there is neither obligation nor financial support, but a common understanding of the importance of sharing such information.

Data are submitted by the contributing countries to the JRC every year and are derived from the collection of individual fire records which, following national standards, are routinely compiled by local fire fighters after the fire has been extinguished.

As mentioned earlier, country contributions to the European fire database are voluntary; EC services provide technical support for converting national data to the common scheme, checking the quality and validating the delivered data, harmonizing

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[1] COM(2013) 659 final

the data structure and maintaining the database. As a consequence, the fire database structure results from a compromise between what is available (and in common) at national level and what is required at European level.

It is important to note that most countries routinely collect forest fire information for administrative purposes mainly, while the European Fire Database is intended to serve in a wider sense the improvement of the knowledge base on forest fires in Europe in order to better support policy making, targeted scientific research and reporting on forest disturbances.

Large differences in data structures and definitions among national data recording systems reflect organizational differences, lack of common forest policies and of shared fire data collection objectives. Such differences pose great challenges to the setting up of the common harmonized database.

To widen the exploitation potential of the national fire data within the European fire database, the common data structure has been gradually modified over the years. Several exchanges took place in this respect within the EC Expert Group on Forest Fires[2]. The database structure has been partially renewed over time towards the collection of additional information on individual fire events and in order to facilitate data harmonization and data quality control. In this context a common understanding of definitions and data specifications is of paramount importance.

The aim of this report is to provide a comprehensive description of the latest European Fire Database structure and the requirements for country data submission. Concretely the report sets out in detail the data items, the formats required for submission and the process of data validation and storage.

In the next section we present a few introductory concepts and definitions; the subsequent sections contain the analytical description of the data items in the database.

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[2] The EC Expert Group on Forest Fires has been established in 1998 by DG Environment. It is composed of representatives of national services which meet regularly to work jointly on EFFIS (http://ec.europa.eu/transparency/regexpert/index.cfm?do=groupDetail.groupDetail&groupID=416)

Data stored in the European Fire Database
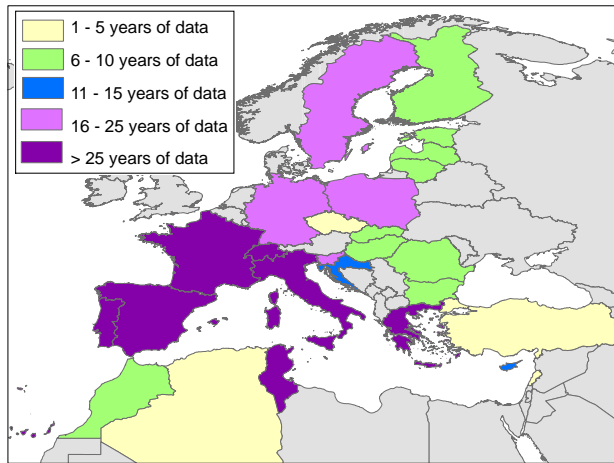
The 26 countries currently contributing to the Database are: Algeria, Bulgaria, Croatia, Cyprus, Czech Republic, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lebanon, Lithuania, Morocco, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tunisia and Turkey.

Several contributing countries have also supplied historical data, resulting in time series of 30 years or more in some cases.

The database currently contains over 2.3 million individual fire event records, of which about 1.83 million are classified as forest fires.

The main target objects of the Database are forest fires, although also other vegetation fires are recorded. For the purpose of the Database forest fires are defined as uncontrolled vegetation fires spreading wholly or in part on forest and/or other wooded land.

Thus, to be classified as a forest fire, the uncontrolled fire has to affect partially or totally, though not exclusively, forest and/or other wooded land and it does not necessarily have to start in a forest.

Other uncontrolled vegetation fires other than forest fires are also stored in the Database, while prescribed burnings are not recorded.

In the fire database, the attributes describing each fire event are key data items on location, time, final size and cause of each fire, recorded in a harmonized way throughout Europe. A short summary is commented below while more detail will be given in next sections.

Fire location is intended as the geographical coordinates of the point of origin of the fire and the identification of the administrative districts where the fire started. The location information is requested to the countries with some redundancy to allow quality checks of the data provided and to accommodate different national standards.

Time attributes provide a snapshot of the temporal sequence (date and time) of main events during the fire: fire alert, start of intervention, end of suppression. The knowledge of the point in time of additional events is not recorded though potentially of interest, such as e.g., estimated time of fire start, time when initial attack fire-fighting crew leaves the office, time when fire is under control (i.e., excluding mop up).

Fire size is the total burned area in hectares split into the main land cover categories affected. Four categories are foreseen: forest, other wooded land, other non-wooded natural land and agriculture.

The terms forest and of other wooded land applied here follow the definitions in the FAO Forest Resource Assessment 2010 (FRA2010)[3] , namely:

Forest: Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10%, or with trees able to reach these thresholds in

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[3] http://www.fao.org/docrep/013/i1757e/i1757e13.pdf

situ. It does not include land that is predominantly under agricultural or urban land use.

Other wooded land: Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5–10%, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10%. It does not include land that is predominantly under agricultural or urban land use.

Other natural land includes all the vegetated land which is not forest or other wooded land and is not predominantly under agricultural or urban land use (e.g., headlands, moorlands, peat bogs, natural grasslands).

Agriculture includes the land predominantly occupied by agriculture.

Fire causes are qualified following a scheme that has been recently introduced[4]. The new classification scheme of fire causes has been conceived to be applicable with limited changes to the country settings, preserving as much as possible the historical data series of each country and exploiting at the same time as much as possible the level of detail of the information available.

The scheme is hierarchical and is made of 29 fire cause classes, organized into 8 groups and 6 categories. The explicit statement on the level of certainty in the attribution of the cause to a fire event has been introduced as a key element in the new scheme.

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[4] Camia A., Durrant T., San-Miguel-Ayanz J. (2013) Harmonized classification scheme of fire causes in the EU adopted for the European Fire Database of EFFIS. EUR 25923 EN. Luxemburg (Luxemburg): Publications Office of the European Union.
Available at: http://forest.jrc.ec.europa.eu/effis/reports/effis-related-publications/

Definitions and data submission

An individual fire record consists of 19 data items, or fields, describing time, location, size and cause of the forest fire. The table below provides an overview of the data items.

The data fields are described in more detail in the following sections.

Group	Data field	Field name
ID	Unique Fire identifier	FIREID
TIME OF FIRE	Date of first alert	DATEAL
	Time of first alert	TIMEAL
	Date of first intervention	DATEIN
	Time of first intervention	TIMEIN
	Date of fire extinction	DATEEX
	Time of fire extinction	TIMEEX
LOCATION OF FIRE	Province Code (national nomenclature)	PROVCODE
	NUTS3 code	NUTS3
	Commune Code (national nomenclature)	CODECOM
	Commune Name (national nomenclature)	NAMECOM
	Latitude	NORTH
	Longitude	EAST
SIZE OF FIRE (Ha)	Burned Area FOREST	BAFOR
	Burned Area OTHER WOODED LAND	BAOW
	Burned Area OTHER NATURAL LAND	BAONW
	Burned Area AGRICULTURAL LAND	BAAGR
CAUSE OF FIRE	Certainty of knowledge of Presumed Cause (EU code)	CAUSE_KNOWN
	Presumed Cause (EU categories code)	CAUSE_EU
	Presumed Cause (Country detailed categories code)	CAUSE_CO

ID: identification of the data record (1 field)

Field name: **FIREID**

Definition: The ID is a unique reference to each fire data record in the source data as provided by the national authority. In the European Fire Database the record will be assigned one additional unique EU identifier.

Data type: May be numeric or alphanumeric. Must be unique.

ID checklist

The FIREID is normally the code used to identify the fire in the submitting country's own database. Every line should have a different ID so that the fire can be easily identified in the data.

If fire identifiers are not used in the national database, or if they are not unique for every line of data, a number corresponding to the line number of the data file may be used instead.

Validation of the ID

- If a FIREID is supplied, it is checked for uniqueness. If unique, it is then incorporated into the specially generated field FIREID_EU which comprises the 2 letter country code, the year of the fire and FIREID.
- If the country FIREID is not supplied or is not suitable (not unique, contains null values, or is too long) a temporary ID is generated, consisting of the record number of the fire. This is then used to generate FIREID_EU.

Date and time of fire (6 fields)

This set of attributes provides a snapshot of the temporal sequence (date and time) of main events during the fire: fire alert, start of intervention, end of suppression.

Date and time of alert

Field name: DATEAL

Definition: Date of first alert: the local date (year, month, day) at which the official forest fire protection services were informed of the outbreak of the fire.

Data type: AlphaNumeric

Format: YYYYMMDD

Field name: TIMEAL

Definition: Time of first alert: the local time (hour, minute) at which the official forest fire protection services were informed of the outbreak of the fire.

Data type: AlphaNumeric

Format: HHMM

Date and time of intervention

Field name: DATEIN

Definition: Date of first intervention: the local date (year, month, day) on which the first fire-fighting units arrived on the scene of the forest fire.

Data type: AlphaNumeric

Format: YYYYMMDD

Field name: TIMEIN

Definition: Time of first intervention: the local time (hour, minute) at which the first fire-fighting units arrived on the scene of the forest fire.

Data type: AlphaNumeric

Format: HHMM

Date and time of extinction

Field name: DATEEX

Definition: Date of fire extinction: the local date (year, month, day) on which the fire was completely extinguished, i.e. when the last fire-fighting units left the scene of the forest fire.

Data type: AlphaNumeric

Format: YYYYMMDD

Field name: TIMEEX

Definition: Time of fire extinction: the local time (hour, minute) at which the fire was completely extinguished, i.e. when the last fire-fighting units left the scene of the forest fire.

Data type: AlphaNumeric

Format: HHMM

Validation of date and time of the fire

- Invalid date and time values are first checked to see if they can be understood with reformatting (e.g. missing leading zero).
- The 24 hour clock format should have been used but needs to be checked (ensure that there are fires occurring after 1259).
- Checks are made for invalid dates (e.g. 31 June). A further check is made to ensure that the date given for the fire occurs in the year declared by the file. (Some packages (e.g. Excel) set dates to 01/01/1900 under some circumstances).
- Some very late fires (end of December) may fall into the next year. Check that these are not repeated in the next year's data submission.
- Frequently the dates are supplied already in date format. Checks are made to ensure that US MMDDYYYY format has not been used.
- If the date/time is all in a single field it must be separated.
- Some dates are in date/time format with a time of 00:00:00 included in the date (frequently hidden by formatting). This is removed and the date is stored as date only.
- If the exact date of the fire is unknown, the day is sometimes set to 00 (eg. 20120400). This gives an invalid date on conversion from the text format. However, the month can still be extracted from the information.
- If DATEAL is missing but either DATEIN or DATEEX are present, they can be used as an estimate of start date (especially if the fire is small). It is best if DATEAL is not a missing value, since other variables (e.g. MONTH) are calculated using it.
- Check that zero values in the TIME fields actually mean "midnight" and not "no information". If all 3 times are zero then the assumption is that all of them are missing. If the other times are around midnight, the value is considered to be genuine.
- The value 9999 is occasionally used for missing data and is replaced with a null value.
- Sometimes a value of 2400 is used to mean midnight. This does not convert to a valid time (needs to be 0000). In these cases, it is necessary to check whether the date is correct, by comparing with the other two dates/times (ie. 01/01/2012 24:00 may need to become 02/01/2012 00:00).
- Some countries supply more than the 3 required dates/times. In this case it is necessary to work out which ones correspond to those requested.
- Date/time of fire alert, intervention and extinction should be in the correct order. Checks are made for negative and unusually long durations (especially for fires that run over midnight or across months).
- Unusually long durations (especially if for exactly one month or week) are checked against the size of fire.

Location of fire (6 fields)

Location is intended as the geographical coordinates of the point of origin of the fire and the identification of the administrative districts where the fire started. The location information is requested from the countries with some redundancy to allow quality checks of the data provided and to accommodate different national standards.

Province code

Field name:PROVCODE

Definition: The administrative unit referred to as "Province" should be reported in the fire record following the national nomenclature. The national "Province" level is the one corresponding to the Eurostat NUTS (National Territorial Unit for Statistics) level 3 (NUTS3) [5].

Data type: Alphanumeric

NUTS3 code

Field name: NUTS3

Definition: The NUTS level 3 is defined in the Regulation (EC) No 1059/2003 of the European Parliament and of the Council of 26 May 2003 and following amending Regulations [6]. The recorded NUTS3 code should be in accordance with the five characters codes reported in the latest amendments[7]. New Member States, for which a list of NUTS3 codes is not provided in EC Regulations, will follow the standard 'Nomenclature of territorial units for statistics (NUTS)' established by the Statistical Office of the European Communities. The reported codes should be the most recent NUTS3 codes as maintained in the GISCO information system[8] (currently NUTS 2010). Countries not included into the GISCO scheme, such as e.g. Middle East and North Africa countries, should find an equivalent administration level. In this case the complete list of names and codes of the geographical units should be submitted in a separate file.

Data type: Alphanumeric

Commune code

Field name: CODECOM

Definition: The "commune" administrative unit of the country corresponds to the Eurostat LAU (Local Area Unit) level 2 (in the past also referred to as NUTS5). This code should follow the Country specific nomenclature[9].

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[5] The names of the administrative units corresponding to the "province" in the difference countries and the full correspondence between national administrative levels and NUTS levels can be found here:
http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/correspondence_tables/national_structures_eu
[6] See note 5 and also:
http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:NUTS
[7] For a complete and update listing of NUTS names and codes see:
http://ec.europa.eu/eurostat/ramon/index.cfm?TargetUrl=DSP_PUB_WELC
[8] The digital versions of the NUTS boundaries and codes can be downloaded from:
http://epp.eurostat.ec.europa.eu/portal/page/portal/gisco_Geographical_information_maps/popups/references/administrative_units_statistical_units_1
[9] See also note 5. The list of communes in each EU country and the corresponding national nomenclature and coding can be downloaded from:
http://epp.eurostat.ec.europa.eu/portal/page/portal/nuts_nomenclature/local_administrative_units

To avoid confusion a complete list of the commune names and codes in use in the Country should be supplied together with the fire data in a separate file.

Data type: Alphanumeric

Commune name

Field name: NAMECOM

Definition: This is the name of the commune corresponding to the commune code.

Data type: Alphanumeric

Latitude

Field name: NORTH

Definition: North coordinate of the presumed fire starting point (if available). If this information is supplied it should be given in decimal degrees where possible. If a projection system is used (e.g. UTM system), this should be clearly explained in a separate document.

Data type: Numeric

Longitude

Field name: EAST

Definition: East coordinate of the presumed fire starting point (if available). If this information is supplied it should be given in decimal degrees where possible. If a projection system is used (e.g. UTM system), this should be clearly explained in a separate document.

Data type: Numeric

Validation of location of fire

- The first check is to ensure that the right version of the NUTS nomenclature has been used in the data submission.
- Sometimes the data extraction routine used by the country renders special characters as other symbols (e.g. the character **ä** may appear as **Σ** instead). These have to be corrected before other checks can be made.
- Where a different alphabet has been used for the place names (e.g. Greek, Arabic) a translation is made to the nearest Western equivalent for ease of reading.
- Sometimes the NUTS code is not supplied by the submitting country. If both commune name and code are given, the NUTS3 code can be inserted from another database.
- Check that "commune" means commune, and not actually a coarser unit measure (e.g. LAU1).
- All location information is checked for internal consistency between NUTS, CODECOM and NAMECOM. This is rarely an automatic procedure, as different spellings and fonts may prevent an exact match.
- If XY coordinates are also supplied, they are checked for consistency with the other location information.
- Commune names without either codes or XY coordinates are a problem because the names are not always unique, even within a single NUTS3 region. These have to be clarified with the submitting country
- When historical data are processed, the communes and NUTS3 regions are checked for changes in boundaries over time. In cases where several small communes have merged there is no problem to assign the new code, but if a large one has split or if the boundaries shift, it is sometime not possible to code accurately. Several strategies may be used to deal with this. If coordinates are

provided, fires may be assigned to the new communes using this information. Otherwise, the fires may either be assigned always to one commune (based on which has the greatest surface area) or randomly assigned between those communes covering the territory of the old one, in the same proportion as their relative surface areas.

- East/North coordinates are checked for accuracy. The correct projection is found using a trial/error process of trying plausible options until one of them maps the fires in the right area, since almost every country uses a different projection, sometimes more than one within a single country/year, and the projection actually used is rarely stated. The coordinates are checked for spatial accuracy and flags are given to points falling within 1) correct country boundaries; 2) correct NUTS3 region and 3) correct commune.

- All coordinates are transformed to LAEA projection and both original and transformed coordinates are stored in the country database along with QC codes (3= point falls within correct commune; 2=outside commune but in correct NUTS3 region; 1=outside NUTS3 but within country boundaries; 0=outside country boundaries).

- If a large number of points or clumps of points fall outside the country, check for different projections/reversal of XY or other possible problems.

Size of Fire (4 fields)

The size of the fire is the area burned in hectares split into the main land cover categories affected. Four categories are foreseen: forest, other wooded land, other non-wooded natural land and agriculture.

Thus, the total burned area should be subdivided into these 4 categories. If this is not possible combined categories may be used (i.e. categories merging 2 of the 4 categories foreseen) but the original definitions should be respected and the original categories should not be split.

The terms forest and of other wooded land applied here follow the definitions in the FAO Forest Resource Assessment 2010 (FRA2010)[10].

The set of land cover categories (or their combinations) actually used in the national data records should be clearly stated in a note. If the portion of the burned area on agricultural lands is never recorded in the national system it should be stated in a note.

Burned area Forest (Ha)

Field name: BAFOR

Definition: Land spanning more than 0.5 hectares with trees higher than 5 meters and a canopy cover of more than 10%, or with trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Data type: Numeric

Burned area Other Wooded Land (Ha)

Field name: BAOW

Definition: Land not classified as "Forest", spanning more than 0.5 hectares; with trees higher than 5 meters and a canopy cover of 5–10%, or trees able to reach these thresholds in situ; or with a combined cover of shrubs, bushes and trees above 10%. It does not include land that is predominantly under agricultural or urban land use.

Data type: Numeric

Burned area Other Non Wooded Natural Land (Ha)

Field name: BAONW

Definition: Vegetated land which is not forest or other wooded land and is not predominantly under agricultural or urban land use (e.g., headlands, moorlands, peat bogs, sparsely vegetated areas, natural grasslands).

Data type: Numeric

Burned area Agricultural And Other Artificial Land (Ha)

Field name: BAAGR

Definition: Land predominantly occupied by agriculture.

Data type: Numeric

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[10] http://www.fao.org/docrep/013/i1757e/i1757e13.pdf

> **Fire size checklist**
>
> All burned area should be given in hectares. The decimal point should be represented as a point (.) not a comma (,) e.g. **3.25** ha
>
> A fire may cover more than one land cover category. The total area burned is calculated as the sum of the burned areas of **Forest**, **Other Wooded Land** and **Other Non-wooded Natural Land**. The burned area of Agricultural and other artificial land is not included.
>
> Please note the difference between zero (0) and null (<blank>) values. Zero should be used for when no area of that land type is burnt. A null value (leaving the field blank) should be used only if the fire size is not known for that land cover type.
>
> An accompanying note should describe the land cove categories actually used to record fire size.

Validation of fire size

- Check that the fires are categorised into one of the 4 types: Forest, Other Wooded Land, Other Non-wooded Natural Land and Agricultural/artificial surfaces.
- If total burnt area is also supplied by the country, check that it is counted as the sum of the first 3 categories (Agricultural fires not included).
- Check in case the country has changed the way that burnt area is allocated to the different categories.
- The units are checked. Fires should be reported in hectares, although historical data were reported in ha*100 with no decimal places, and up to 2012, two countries still submitted data in these units. Occasionally ha*10 is reported. These are transformed to hectare values.
- Missing values are sometimes given a code of 999 – these must be replaced with a null value (<blank>).
- Some burnt areas are reported with a comma separator instead of a point. These must be changed to a point; otherwise the data are interpreted by the database as non-numeric and are rejected.
- To accommodate the different combinations of forest types that are given, the database contains a variety of extra combined types: FOW (Forest + Other Wooded Land) and NF (Other Non-wooded Land + Agricultural fires when these are not reported separately). These extra categories are also calculated for countries who supply the information in all 4 requested land types, for consistency in the database.
- Some countries supply burnt areas for individual species or groups. In these cases they must first be allocated to the correct group (FOR, OW, ONW, AGR) and then aggregated.
- The total burnt area is inspected for plausibility. Fires of zero size are checked to see if they represent very small fires (burnt area rounds down to zero) or erroneous entry in the data file (non-forest fire, duplicated entry).
- The total burnt area is checked against the duration of the fire. Very small fires that burn for many days and very large fires that are extinguished within minutes are both considered suspect, although it is not possible to ascertain which data variable is erroneous without extra information from the submitting country.

Cause of fire (3 fields)

In 2012, a new scheme of fire causes classification was agreed to be adopted as a common way to record fire causes when reporting national data to the European Fire Database[11]. The scheme is hierarchical and is made of 29 fire cause classes, 8 groups and 6 categories. In addition, an explicit statement on the level of certainty in the attribution of the cause to a fire event has been introduced as a key element of the new scheme.

Knowledge about presumed Cause (EU code)
Field name: CAUSE_KNOWN

Definition: Confidence level of the knowledge about the fire cause, coded into one out of five categories (see table below)

Data type: Numeric code

Format: Integer 1-5

Code	Description
1	Information not given (level of certainty not specified)
2	Cause not investigated (unknown because investigation not carried out)
3	Cause not found (unknown because investigation carried out but cause not found)
4	Cause uncertain (point of origin not found precisely or cause assumed after a number of different elements from the investigation)
5	Cause certain (point of origin found and cause positively determined after investigation)

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[11] Detailed information and description of the new scheme of fire causes on:
http://forest.jrc.ec.europa.eu/media/cms_page_media/82/LB-NA-25-923-EN-N.pdf

Presumed Cause (EU categories code)
Field name: CAUSE_EU

<u>Definition</u>:   The cause of the fire should be classified into one of 6 main <u>categories</u>. When more detailed knowledge about the fire cause is available, the code can refer to the <u>group</u> or to the cause <u>class</u> as appropriate. See the table below for the complete list of 3 digit codes and corresponding definition.

<u>Data type</u>:   Numeric code

<u>Format</u>:   Integer (3 digits: *nnn)*

CATEGORY	GROUP	CLASS
100 UNKNOWN	100 Unknown	100 Unknown
200 NATURAL	200 Natural	201 Lightning
		202 Volcanism
		203 Gas emission
300 ACCIDENT	300 Accident	301 Electrical power
		302 Railroads (Railways)
		303 Vehicles
		304 Works
		305 Weapons (firearms, explosives, etc.)
		306 Self-ignition (auto-combustion)
		307 Other accident
400 NEGLIGENCE	410 Use of fire	411 Vegetation management
		412 Agricultural burnings
		413 Waste management
		414 Recreation
		415 Other negligent use of fire
	420 Use of glowing objects	421 Fireworks, firecrackers and distress flares
		422 Cigarettes
		423 Hot ashes
		424 Other use of glowing object
500 DELIBERATE	510 Responsible (arson)	511 Interest (profit)
		512 Conflict (revenge)
		513 Vandalism
		514 Excitement (incendiary)
		515 Crime concealment
		516 Extremist
	520 Irresponsible	521 Mental illness
		522 Children
600 REKINDLE	600 Rekindle	600 Rekindle

Presumed Cause (Country detailed categories code)

Field name: CAUSE_CO

Definition: This is the code of the cause category adopted by the Country in the national system. A specific code for restarting fire should be included. A separate full list of causes codes and description is also requested.

Data type: Alphaumeric

As mentioned earlier, more detailed information on the new European fire cause categories with a full description of each class and its relation to the national fire cause codes may be found in http://forest.jrc.ec.europa.eu/effis/reports/effis-related-publications/ in the report *Harmonized classification scheme of fire causes in the EU adopted for the European Fire Database of EFFIS*.

Validation of fire causes

- The association between the EU and national code systems (CAUSE_EU and CAUSE_CO) is checked for consistency.
- When the EU codes are used, check that the mappings between them and the national codes provided are the same as those given in the referenced report (if not, clarify which one should be used).

Frequently Asked Questions about data submission

What file format should I use?

The data may be submitted in Excel format; however other formats (e.g. comma separated ASCII, mdb files) are also acceptable. The main requirement is that all the data fields must be clearly identified and follow the rules detailed in this report.

What about missing values?

If a value is missing (not known, unrecorded) the field should be left blank (null value). DO NOT use any other code (zero, 999 etc.) to identify missing values. In particular, do not use "0000" to signify a missing time value (it is interpreted as "midnight" in the database). Conversely if, for example, one land cover category was not affected by a given fire, the corresponding burned area filed should be recorded as 0 (zero) and not left blank (which means the fire size in that specific category is not known).

When should I submit data?

Data for a specific year is normally requested by June of the following year. However the data may be sent before then as it eases workflow. Data from past years (historic archive) are welcome at any time.

Who has access to the data?

Aggregated data are made available through the Fire History module of EFFIS (http://forest.jrc.ec.europa.eu/effis/). Users can request annual or monthly summaries of burnt area or number of fires by country, NUTS2 or NUTS3 region. Raw data are never made available to third parties, except back to the originator of the information (to restore data after a crash of the national database, for example).

What happens if I submit extra data?

Variables other than those specified in this report are not requested; however if a country makes available further information (such as species affected, weather conditions, casualties, etc.) the data are stored in a separate but linked database. These data are not made available (even in aggregated form) to anybody outside the EFFIS team but may be used by JRC as part of internal validation checks and data analyses.

Other useful information

In order for the data to be correctly interpreted, the following information is also requested together with the data:

- List of country provinces with names and codes;
- List of Country communes with names and codes;
- List of Country fire cause codes and explanations;
- Explanation of any special circumstances or other information that may affect the interpretation of the data (e.g. if the fire data do not represent the whole area of the country, or if different definitions of land cover categories used for recording fire size).

Abstract

The European Fire Database is an important component of the European Forest Fire Information System (EFFIS), the EC focal point of information on forest fires established by the Joint Research Centre (JRC) and the Directorate General for Environment to provide up to date and harmonized information on forest fires in Europe. As of 2014 EFFIS is part of the Forest Information System for Europe (FISE), following the new EU Forest Strategy adopted in 2013.
The Fire Database is the largest repository of information on individual fire events in Europe and is the end product of a long collaboration between European countries and the European Commission on forest fires.
It contains forest fire information compiled by member countries of the EFFIS network. Fire data provided each year by national authorities are checked, stored and managed by JRC within the fire database.
Each country has its own internal rules of reporting on individual fire events which is in most cases done mainly for administrative purposes. To widen the exploitation potential of the national fire data within the European Fire Database and to enhance data harmonization and data quality control, the common data set up has been gradually modified over the years.
A common and in depth understanding of latest definitions and data specifications is of paramount importance. This report intends to contribute to these efforts illustrating in detail the data stored in the European Fire Database, their definitions, the formats required for country data submission and the process of data validation and storage carried out at JRC.

JRC Mission

As the Commission's
in-house science service,
the Joint Research Centre's
mission is to provide EU
policies with independent,
evidence-based scientific
and technical support
throughout the whole
policy cycle.

Working in close
cooperation with policy
Directorates-General,
the JRC addresses key
societal challenges while
stimulating innovation
through developing new
methods, tools and
standards, and sharing
its know-how with
the Member States,
the scientific community
and international partners.

Serving society
Stimulating innovation
Supporting legislation