

Table 1: Key National Veld Fire Information System Reports

Typical information requirement	Type of answer required
<i>Fire incident information</i>	
Details of a particular fire incident	Extract a fire incident record from database
<i>Numbers of fires</i>	
Number of fires per FPA or level of government, such as a local or district municipality, province or nationally.	Sum of fires, by a given time period (day, week, month, season, year) for each spatial scale
Number of fires per FPA or level of government, such as a local or district municipality, province or nationally that spawned multiple fires	Sum of fires, by a given time period (day, week, month, season, year) for each spatial scale where multiple fires were spawned
<i>Progress in reducing fires, categorised by spatial scale</i>	
Evaluation of progress in reducing fire incidents filtered by spatial scales	Historical analysis at a particular spatial scale to detect trends in the number of fires that occurred each year.
<i>Fire duration information</i>	
Typical duration of fires per FPA or level of government, such as a local or district municipality, province or nationally	Average of fire durations per spatial scale, broken down into daily, weekly, monthly, yearly or full historical categories
<i>Fire cause information</i>	
Causes of fires per FPA, local or district municipality, province or nationally.	Sum and percentage figures of fire causes by spatial scale, broken down into daily, weekly, monthly, yearly or full historical categories.
Causes of fires per FPA, local or district municipality, province or nationally, filtered by wildfire or prescribed burn causal category	Sum and percentage figures of fire causes per spatial scale, by day, week, month, year or historical categories, filtered by causal type.
Causes of fires per FPA, local or district municipality, province or nationally, filtered by wildfire category	Sum and percentage figures of fire causes by spatial scale, by day, week, month, year or historical categories, filtered by wildfire type, e.g., human causes, natural causes, mechanical/ industrial causes
<i>Miscellaneous fire information</i>	
Number of fires crossing FPA boundaries in a given period, filtered by spatial scale	A sum of the fire incidents where the fire crossed FPA boundaries, filtered by particular spatial scale
Number of fires crossing property boundaries in a given period, filtered by spatial scale	A sum of the fire incidents where the fire crossed property boundaries, filtered by particular spatial scale
Estimated area burnt in a given period, described at a particular spatial scale	A sum of the estimated areas burnt at a particular spatial scale

Areas of natural vegetation burnt in fires in a given period, filtered by spatial scale	A sum of the estimated areas burnt at a particular spatial scale, filtered by fire type
<i>Fire consequence information categorised by spatial scale and temporal unit</i>	
Consequences of fires for life vulnerability	A sum of the number of fires at a certain spatial scale in a given period, filtered by consequence level for life vulnerability
Consequences of fires for economic vulnerability	A sum of the number of fires at a certain spatial scale in a given period, filtered by consequence level for economic vulnerability
Consequences of fires for environmental and ecological vulnerability	A sum of the number of fires at a certain spatial scale in a given period, filtered by consequence level for environmental and ecological vulnerability
<i>Fire cost information</i>	
Costs due to loss of social assets in a given period at a particular spatial scale	The number of units of social assets lost to fire and the estimated cost of the loss, in a given period, at a particular spatial scale
Costs due to loss of environmental assets in a given period at a particular spatial scale	The number of times that environmental assets are lost to fire, in a given period, at a particular spatial scale
Costs due to loss of economic assets in a given period at a particular spatial scale	The number of units of economic assets lost to fire and the estimated cost of the loss, in a given period, at a particular spatial scale
<i>Human life impacts information</i>	
Fatalities resulting from veld fires, filtered by direct or indirect exposure as a cause, per spatial scale, for given time periods	A sum of the number of fatalities resulting from veld fires, categorised by direct or indirect exposure to fire as a cause, filtered by spatial scale and given time period
Serious injuries resulting from veld fires, filtered by direct or indirect exposure as a cause, per spatial scale, for given time periods	A sum of the number of major injuries resulting from veld fires, categorised by direct or indirect exposure to fire as a cause, filtered by spatial scale and given time period
Minor injuries resulting from veld fires, filtered by direct or indirect exposure as a cause, per spatial scale, for given time periods	A sum of the number of minor injuries resulting from veld fires, categorised by direct or indirect exposure to fire as a cause, filtered by spatial scale and given time period
<i>Fire suppression information</i>	
Cost of suppressing fires in terms of manpower used, per time period for a given spatial scale	A sum of the reported manpower costs incurred in suppressing fires in a given time period, at a given spatial scale
Cost of suppressing fires in terms of ground-based machinery used, per time period for a given spatial scale	A sum of the reported ground-based machinery costs incurred in suppressing fires in a given time period, at a given spatial scale
Cost of suppressing fires in terms of aircraft used, per time period for a given spatial scale	A sum of the reported aircraft costs incurred in suppressing fires in a given time period, at a given spatial scale
Constraints to fire suppression in terms of lack of an item or condition, filtered by item or condition, per spatial scale, for a given time period	A sum of the number of times a constraint ("lack of " type) was reported, in a given time period, for a given spatial scale and filtered by constraint category

Constraints to fire suppression in terms of shortcomings, filtered by shortcoming category, per spatial scale, for a given time period	A sum of the number of times a constraint ("shortcomings in " type) was reported, in a given time period, for a given spatial scale and filtered by constraint category
<i>Fire danger ratings information categorised by spatial scale</i>	
Expected levels of fire activity at a given fire danger rating	An analysis of the number of fires igniting under a given fire danger rating
Expected rank of effort required to suppress fires at a given fire danger rating	An analysis of reported effort expended to suppress fires that occurred under a given fire danger rating
Expected duration of fires under a given fire danger rating	An analysis of reported durations of fires that occurred under a given fire danger rating
Expected levels of loss and fire consequence under a given fire danger rating	Analysis of the extents of fires, and the losses and costs incurred as a result, under a given fire danger rating
Likely causes of fire under a given fire danger rating	Historical analysis of fire causes and the fire danger rating prevailing at the time of the fires
Expected fire danger rating when a prescribed burn is likely to burn out of control.	Historical analysis of fire data to determine the link between loss of control of prescribed burns and the fire danger index in place at the time of the fires
Expected likelihood of fires being suppressed under given fire danger rating conditions	Historical analysis of fire data to determine whether fires that ignited under a given fire danger rating were suppressed
Expected level of resources needed to suppress fires under given fire danger rating conditions	Historical analysis of fire data to determine trends in resources needed to suppress fires under a given fire danger rating
<i>Information on the links between weather conditions and fires</i>	
Weather conditions associated with different types of fires	An analysis of links between fires burning out of control under certain weather conditions, or remaining controllable
Weather condition changes that resulted in loss of control or regaining of control over fires	An analysis of links between fires burning out of control under certain weather condition changes, or becoming controllable
<i>Law enforcement information</i>	
Frequency of involvement of SA Police Services in fire incidents, filtered by spatial scale and time period	A sum of the number of times a fire incident has been reported to the police, in a given time period and for a given spatial scale
Frequency of involvement of National Disaster Management Centre in fire incidents, filtered by spatial scale and time period	A sum of the number of times a fire incident has been reported to the NDMC, in a given time period and for a given spatial scale
Frequency of special investigations into fire incidents, filtered by spatial scale and time period	A sum of the number of times a fire incident has resulted in a special investigation, in a given time period and for a given spatial scale
Frequency of other investigations, like inquests into fire incidents, filtered by spatial scale and time period	A sum of the number of times a fire incident has resulted in other forms of investigation, in a given time period and for a given spatial scale

Appendix 1. Fire incident report capture form

National Veld and forest Fire Act (No. 101 of 1998)

Veldfire Incident Report Form

This form should be completed for every veldfire that occurs in your FPA. A veldfire is defined as a veld, forest or mountain fire, where veld means the open countryside or peri-urban land beyond the urban limit or homestead boundary. Please complete Parts A to C for a prescribed burn or an insignificant wildfire, and the whole form for all other wildfires. Fires are considered insignificant if there were no injuries; inconsequential or no damage to property; and minor impact on environment.

Where several fires ignite more or less at the same time and combine to make up one wildfire, complete one report. If wildfires occur more or less at the same time but burn separate areas, complete one report for each.

Fill in the form to the best of your current knowledge; if at a later stage additional information becomes available please contact your FPA to update the fire report.

Unique Report No: <system generated number>

PART A **Reporting**

Report compiled by:

Name: _____ Agency: _____
Capacity: _____ Date: _____
Tel (H): _____ Fax: _____
Tel (Cell): _____ Email: _____

Approved by Fire

Protection Officer: _____ Date: _____

Signature: _____

PART B **Fire Location, Duration and Cause**

1. **PARTICULARS OF FPA**

1.1 Name: _____

1.2 Name of Local Municipality, District Management Area or Metropole: _____

2. **LOCATION OF FIRE**

2.1 Farm name: _____ Farm number: _____

or

Name of communal property (if applicable and no farm name or number is available):

or

Protected area name (if applicable, and in addition to farm name or number, where available):

Yes

No

2.2 Multiple fires:

If **Yes**, number of fires: _____

3. DURATION

3.1 Date and time ignited: Day _____ Month _____ Year _____ Hour __h__ (am/pm)

3.2 Date and time extinguished: Day _____ Month _____ Year _____ Hour __h__ (am/pm)

4. CAUSE OF FIRE

4.1 Tick the appropriate cause of the fire in the table below:

Not yet known	<input type="checkbox"/>
Unknown	<input type="checkbox"/>

(Only tick prescribed burn or wildfire if the cause of fire is known for certain)

	PRESCRIBED BURN ¹	WILDFIRE ²					
		Human		Mechanical / industrial		Natural	
Firebreak	<input type="checkbox"/>	Escaped prescribed burn	<input type="checkbox"/>	Motor vehicle	<input type="checkbox"/>	Lightning	<input type="checkbox"/>
Prescribed veld burning	<input type="checkbox"/>	Open fires ³	<input type="checkbox"/>	Train	<input type="checkbox"/>	Static electricity	<input type="checkbox"/>
Prescribed burn in plantation forest	<input type="checkbox"/>	Honey hunters	<input type="checkbox"/>	Power tools; machines	<input type="checkbox"/>	Falling rocks	<input type="checkbox"/>
Plantation slash	<input type="checkbox"/>	Incendiarism	<input type="checkbox"/>	Blasting	<input type="checkbox"/>		
Crop residue	<input type="checkbox"/>	Flare or fireworks	<input type="checkbox"/>	Power lines	<input type="checkbox"/>		
Prescribed burn in sugar cane field	<input type="checkbox"/>	Discarded cigarette, burning tobacco or match	<input type="checkbox"/>				
Refuse dump	<input type="checkbox"/>						
Fuel reduction after clearing of invasive alien species	<input type="checkbox"/>						
Other	<input type="checkbox"/>	Other (specify)					

Notes:

1. **Prescribed burns** are the controlled application of fire under specified environmental conditions to a predetermined area and at the time, intensity and rate of spread required to attain planned management objectives.
2. **Wildfires** are unwanted veldfires.
3. **Open fires** such as cooking (braai) fires, picnic and warming fires.

PART C
Miscellaneous Fire Information

6.1 Approximate area burnt (ha): _____

6.2 Longest axis of burn (km): _____

Yes No

6.3 Did the fire cross property boundaries?:

Yes No

6.4 Did the fire cross FPA boundaries?:

6.5 If natural vegetation was burnt, enter the fire type and area burnt in the table below:

Fire Type	Hectares	Fire Type	Hectares
Sweet grassland		Thicket	
Sour grassland		Forest	
Coastal grassland		Indigenous forest	
Fynbos		Nama Karoo	
Arid savanna		Succulent Karoo	
Moist savanna			

PART D
Weather Conditions (optional)

Enter the weather conditions at most appropriate weather station:

5.1 Name of weather station: _____

5.2 Station number: _____

5.3 Enter the weather conditions in the table below:

Start of fire:		2pm on day of start:		End of fire:	
Wind speed (km/h)		Wind speed (km/h)		Wind speed (km/h)	
Wind direction		Wind direction		Wind direction	
Wind measurement height ⁴		Wind measurement height ⁴		Wind measurement height ⁴	
Temp (°C) ⁵		Temp (°C) ⁵		Temp (°C) ⁵	
Relative humidity (%)		Relative humidity (%)		Relative humidity (%)	
FDI model used		FDI model used		FDI model used	
FDI value		FDI value		FDI value	

Notes:

4. Wind speed measurement should be either 2 or 10 m above ground level
5. Temperature reading 1.4 m above ground level in the shade (Stevenson Screen)

PART E

Fire Consequence

Below is a table of criteria for the level of consequence of a fire. Please answer questions 7.1, 7.2 and 7.3 with regards to this table. For example, if no injuries resulted from the fire then 7.1 would be answered by entering the value **1** into the space provided.

Level of consequence		Life vulnerability criteria	Economic vulnerability criteria	Environmental and ecological vulnerability criteria
1	Catastrophic	Death	Depressed economy of the FPA. Extensive and widespread loss of assets. Major impact across a large part of the community and region. Long-term external assistance required to recover.	Permanent loss of species or habitats within the area or of water catchment values.
2	Major	Extensive injuries, evacuation required.	Serious financial loss, affecting a significant portion of the community. Requires external funding (e.g. from Disaster Management funds) to recover.	Habitat destruction, temporary loss of species, or temporary loss of catchment values, requiring several years to recover.
3	Moderate	Medical treatment required.	Localised damage to property. Short-term external assistance required to recover.	Serious impact on the environment that will take a few years to recover.
4	Minor	Minor injuries only – first aid treatment required.	Minor financial loss. Short-term damage to individual assets. Recovery requires no external assistance.	Discernable environmental impact. Assets recover rapidly.
5	Insignificant	No injuries	Inconsequential or no damage to property	Minor impact on the environment

7.1 Level of consequence for life vulnerability: _____

7.2 Level of consequence for economic vulnerability: _____

7.3 Level of consequence for environmental vulnerability: _____

7.4 Indicate the loss to social, economic and environmental assets in the table below (excluding costs incurred in suppressing the fire):

Burnt	Units	Number	Estimated Cost (Rands)
Social			
Town	Houses and other buildings		

Settlement	Houses and other buildings		
Farmstead and Resorts	count		
Pre-historic sites	count		
Ancestral and/or sacred sites	count		
Other (<i>Describe</i>)			
Economic			
Plantation forest	ha		
Crops: Irrigated	ha		
Crops: Dryland	ha		
Orchards	ha		
Livestock	count		
Pasture	ha		
Buildings	count		
Fencing	km		
Telephone lines	km		
Power lines	km		
Transmission loss to Eskom	hours		
Vehicles	count		
Equipment	count		
Other (<i>Describe</i>)			
Environmental (indicate only if moderate to catastrophic consequence)			

Reduction in available water supply	Y/N	
Reduction in water quality	Y/N	
Wetlands	ha	
Rare and endemic plants	Y/ N	
Vulnerable species	Y/ N	
Sensitive habitats	Y/ N	
Invasive alien vegetation	ha	
Other (<i>Describe</i>)		

7.5 Indicate any injuries and/or loss to human lives

Loss	Caused by direct exposure to fire ⁶	Caused by indirect exposure to fire ⁶
Number of fatalities		
Number of serious injuries ⁷		
Number of minor Injuries		

Notes:

6. Specify either direct exposure or indirect (consequential) exposure to the fire as a cause
7. Serious injury refers to injuries requiring the attention of a medical doctor or hospitalisation

PART F
Fire Suppression

8.1 Time reported: Day ____ Month ____ Year ____ Hour __h__ (am/pm)

Yes No

8.2 Was the fire responded to?

(If **Yes** please complete the rest of Part F)

8.3 Agencies involved in fire suppression:

Rank of effort to suppress the fire, by selecting a rank {e.g. 2} from the table below which best suits the effort that was required to suppress the fire.

Rank	1	2	3	4	5
EFFORT REQUIRED TO SUPPRESS FIRE	No suppression was necessary.	Fires were approached on foot. Suppression was readily achieved by direct manual attack methods.	Fires were not readily approachable on foot for more than very short periods. Best forms of suppression were to combine water tankers and back burning from prepared lines.	Fires could not be approached at all. Back burning, combined with aerial water bombing were the only effective ways to combat the fire. Equipment such as water tankers concentrated efforts on the protection of houses.	No form of fire suppression was effective until the weather changed. Back burning would have been dangerous and best avoided.

8.4 Rank of effort: _____

8.5 Indicate the direct cost of fire suppression in the table below:

Type	Number	Hours	Cost (Rands)
Manpower (e.g. fire fighters)			
Vehicles (e.g. fire tenders)			
Aircraft (e.g. fixed wing, helicopter)			
Other			
Total cost			

Yes No

8.6 Were there constraints to fire suppression?

If **Yes**, please tick the appropriate constraints in the table below:

Lack of:	Shortcomings in:	
Personnel	<input type="checkbox"/>	Incident command <input type="checkbox"/>
Training	<input type="checkbox"/>	Coordinating structures <input type="checkbox"/>

Ground based equipment		Weather information
Communications		Other (specify)
Aerial support		
Favourable weather conditions		
Early warning		
Water sources		
Other (specify)		

PART G
Law Enforcement

Yes No

9.1 Has fire been reported to the SA Police Services?

If **Yes**: Where? _____ Case Number: _____ Date: _____
 Yes No

9.2 Is a special investigation of the fire being conducted?:

If **Yes**: Reference ID: _____ Reference Information: _____
 (e.g. report name, authors, date etc.)

Yes No

9.3 Has the fire incident been reported to the National Disaster Management Centre?:

If **Yes**: Reference Number: _____

Yes No

9.4 Have other investigations been conducted e.g. Inquests?:

If **Yes**: Reference Number: _____

PART H
Additional Information

Yes No

10.1 Was a chronological log of events kept?:

If **Yes**: Log identification: _____

Yes No

10.2 Has a map been compiled of the boundaries of the fire where available?:

If **Yes**: Map reference number: _____

Scale: _____

Yes No

10.3 Was a post-fire briefing held?: