

FS WILDFIRE CLASSIFICATION GUIDE

1. FUEL CLASSIFICATION TABLES

The fuel load classifications are based on averages for a grassland biome that is the dominant fuel environment in more than 80% of the Free State Province

Table 1: FUEL LOAD INDEX

FUEL LOAD kg/ha	1000 - 1500kg/ha	1500 -2500kg/ha	2500-3500kg/ha	3500 -4000kg/ha	>4000kg/ha
FUEL DANGER RATING	INSIGNIFICANT	LOW	MEDIUM	HIGH	EXTREME
INDICATIVE COLOUR	BLUE	GREEN	YELLOW	ORANGE	RED

Table 2: FUEL CURING INDEX

FUEL CURING PERCENTAGE	0-20%	21-40%	41-60%	61-80%	81-100%
CURING DANGER RATING	INSIGNIFICANT	LOW	MEDIUM	HIGH	EXTREME
INDICATIVE COLOUR	BLUE	GREEN	YELLOW	ORANGE	RED

Table 3: FREE STATE FUEL DANGER RATING TABLE

FUEL CURING %	FUEL LOADING IN KILOGRAMS PER HECTARE				
	1000 - 1500kg/ha	1500 -2500kg/ha	2500-3500kg/ha	3500 -4000kg/ha	>4000kg/ha
0-20%	INSIGNIFICANT	INSIGNIFICANT	INSIGNIFICANT	LOW	MEDIUM
21-40%	INSIGNIFICANT	INSIGNIFICANT	LOW	MEDIUM	HIGH
41-60%	LOW	LOW	MEDIUM	HIGH	HIGH
61-80%	LOW	MEDIUM	HIGH	EXTREME	EXTREME
81-100%	MEDIUM	HIGH	EXTREME	EXTREME	EXTREME

2. FIRE CLASSIFICATION TABLES

The fire classification table combines the Fire Danger Index (FDI) with the Free State Fuel Danger Rating Table (FDR) to produce a common evaluation tool for fire classification.

Table 4: FIRE CLASSIFICATION TABLE

FUEL DANGER RATING	INSIGNIFICANT	LOW	MEDIUM	HIGH	EXTREME
FDI BLUE	Fire Type 5	Fire Type 5	Fire Type 5	Fire Type 5	Fire Type 5
FDI GREEN	Fire Type 5	Fire Type 5	Fire Type 4	Fire Type 4	Fire Type 4
FDI YELLOW	Fire Type 5	Fire Type 5	Fire Type 4	Fire Type 3	Fire Type 3
FDI ORANGE	Fire Type 5	Fire Type 4	Fire Type 3	Fire Type 2	Fire Type 1
FDI RED	Fire Type 4	Fire Type 3	Fire Type 2	Fire Type 1	Fire Type 1

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The Fire Typing Table gives a generalized description of expected fire intensity, suppression difficulty, resource recommendations and ICS requirements for grass fires in the Free State.

Table 5: FREE STATE WILDFIRE TYPING TABLE

TYPE 5 FIRE	Fire Description	Fire Suppression Difficulty	ICS Requirement
Fire Intensity kJ/s/m	1000 -1500	<ul style="list-style-type: none"> • 2-4 SBU's or a WoF Strike Team with a SU or an unsupported WoF hand crew should easily suppress the fire. • No logistical support needed • Nominal control lines (1.5 x fuel height) will assist in containing fire spread. • Effective use of basic firefighting tools with minimal tactical planning is required to suppress the fire. Direct attack on the head fire with SBU's is feasible. 	<ul style="list-style-type: none"> • No written IAP is required. • Verbal tasking and coordination of resources via radio or cellular communication. • Incident duration is 30 minutes – 2 hours including mop-up. • Filing of standard fire report is only mandatory recordkeeping.
Flame Length	Low: 0.5-1.00m		
Kill Zone	1.5-3m		
Forward ROS	<800m/h		
TYPE 4 FIRE	Fire Description	Fire Suppression Difficulty	ICS Requirement
Fire Intensity kJ/s/m	1500 - 2000	<ul style="list-style-type: none"> • 6-10 SBU's or a WoF Strike Team with a SU and coordinating with 2-4 SBU's or a full Wof Hand Crew coordinating with 4-6 SBU's should be able to suppress the fire without great difficulty. • Basic logistical support from 2 small or 1 medium water tanker/s is needed if the distance to a reliable water source exceeds 1 km. • Standard control lines (3 x fuel height) will assist in containing fire spread. • Effective use of firefighting tools and equipment combined with basic tactical planning is required to suppress the fire. Suppression tactics may include mobile flanking or pincher attack methods. Tactical burning in combination with a mobile pincher attack can be considered. Direct attack on the head fire with specialised wildland pumpers or standard pumpers from a control line is feasible but should not be undertaken with SBU's. 	<ul style="list-style-type: none"> • Wildfire Incident Organizer booklet to be completed by initial attack IC during incident. • Resources must do physical check in, for field level briefing and tasking. • Incident duration is 2 – 4hrs including mop-up.
Flame Lengths	Moderate: 1-2m		
Kill Zone	3-6m		
Forward ROS	800-1000m/h		
TYPE 3 FIRE	Fire Description	Fire Suppression Difficulty	ICS Requirement
Fire Intensity kJ/s/m	2001 - 2800	<ul style="list-style-type: none"> • 18-20 SBU's or 12-16 SBU's with support of a WoF Strike Team with a SU. Wof Hand Crews cannot effectively be deployed in a direct attack role over even ground and must provide support for mop-up or direct attack in steep, low fuel environments. • Basic logistical support of 2-4 medium or 3 large water tankers is essential. • Strategic control lines (10-12m) will assist in containing forward fire spread. • Proficient implementation of firefighting tactics and effective deployment of resources is required to suppress the fire. Suppression tactics should include a combination of direct and indirect attack methods. Tactical burning in combination with a mobile pincher attack is highly recommended. Direct attack on the head fire with ground resources is dangerous and should not be attempted. • Evacuation of animals that is threatened by the spreading fire must be prioritised. 	<ul style="list-style-type: none"> • Official SAICS Incident Organizer for Wildland Fire to be used for IAP development. • ICP established, division/group supervisors' positions activated. • In-briefing provided for arriving resources. • Some divisions and/or groups established, field level briefings for resource assignments. • Incident duration is 4-8hrs including mop-up.
Flame Lengths	High: 2-4m		
Kill Zone	6-12m		
Forward ROS	1000 – 2000m/h		

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Table 5 (Continued): FREE STATE WILDFIRE TYPING TABLE

TYPE 2 FIRE		Fire Description	Fire Suppression Difficulty	ICS Requirement
Fire Intensity kJ/s/m	3000 - 3600	2000 -4000m/h	<ul style="list-style-type: none"> • 18-20 SBU's and 2 WoF Strike Teams or 2 WoF Hand Crews with extensive logistical support is the minimum resource requirement to contain and suppress the fire. Wof Hand Crews cannot be deployed in a direct attack role and provides support for mop-up, crews SBU's or is utilised for indirect attack strategies. • Extensive coordinated logistical support with bulk water tankers is essential to maintain effective control and suppression efforts. • Strategic Buffer zones (20-30m) will assist in containing forward fire spread. • Basic strategic planning is needed for setting objectives while proficient implementation of firefighting tactics and effective use of resources is required to suppress the fire. Suppression strategies can include a combination of direct and indirect attack methods. Task teams can execute tactical burning operations while direct attack on the fire flanks are maintained. • Aerial suppression support for ground operations over steep terrain is essential and highly recommended for suppression of head fires over even terrain. • Structure defence and evacuation of animals threatened by the spreading fire must be prioritised. 	<ul style="list-style-type: none"> • Official SAICS Incident Organizer for Wildland Fire to be used for IAP development per operational period. • ICP & staging area established, some Command and General Staff positions on division/group supervisors and/or Unit Leader level activated. • Logistical support is becoming crucial to sustain operations. • Formal briefings instituted. • Multiple task/strike teams established. • Incident duration is 8-24hrs mop-up extends operational periods.
Flame Length	Very High: 4-8m			
Kill Zone	9-16m			
Forward ROS				
TYPE 1 FIRE		Fire Description	Fire Suppression Difficulty	ICS Requirement
Fire Intensity kJ/s/m	>3700	4000 – 8000m/h	<ul style="list-style-type: none"> • 20-30 SBU's and 3-4 WoF Strike Teams or 2-3 WoF Hand Crews with extensive logistical support is the minimum resource requirement to contain and suppress the fire. Wof Hand Crews cannot be deployed in a direct attack role and provides support for mop-up, crews SBU's or is utilised for indirect attack strategies. • Extensive coordinated logistical support with bulk water tankers is essential to maintain effective control and suppression operations. • Fire unlikely to be contained under prevailing conditions by buffer zones. • Basic strategic planning is needed for setting objectives while proficient implementation of firefighting tactics and effective use of resources is required to suppress the fire. Suppression strategies must emphasise indirect attack methods with a focus on containment because effective suppression is unlikely until weather conditions change. Tactical burning operations is limited and can only be undertaken along well-prepared control lines by proficient Task teams. • Aerial containment support for ground operations over steep terrain and suppression of flanking fires and suppression of head fires over even terrain is essential. Structure defense and evacuation of people and animals threatened by the spreading fire must be prioritized. 	<ul style="list-style-type: none"> • Full ICS planning process for IAP development per operational period. • ICP with extended facilities established, most Command and General Staff positions and some division/group supervisors and/or Unit Leader levels activated. • Logistical support is extensive. • Formal briefings occur regularly. • Multiple groups task/strike teams established. • Incident extends beyond 24hrs with extensive mop-up operations over multiple operational periods.
Flame Length	Extreme: 8-15m			
Kill Zone	>16m			
Forward ROS				