
Overview

This standard is about supervising and leading vegetation fire suppression operations, where nation-specific government guidelines allow for this. This is aimed at those who work in forestry, farming, game and wildlife or environmental conservation.

To meet this standard you will be able to:

- contribute to the development of fire suppression plans and maps
- contribute to defining and organising the practical requirements associated with safe vegetation fire suppression operations
- contribute to defining the development of fire suppression tasking
- supervise and lead individuals and teams in support of fire suppression operations
- take the required action in the event of an incident or emergency
- evaluate the effectiveness of fire suppression operations.

When carrying out vegetation fire suppression you should be trained, and hold current certification where required, in accordance with nation-specific legislation.

You must also comply with the current legal requirements and codes of practice relevant to the nation in which the activity takes place.

When present, the Fire and Rescue Service for your area is in charge and legally responsible for all fire suppression activities on the fireground. You must follow their instructions and your own organisation's safe working procedures.

Performance criteria

You must be able to:

1. assess vegetation fire hazards and fire risks in order to inform fire management planning
2. collect and confirm information relating to the known and anticipated risks to people, property, the environment and wildlife
3. contribute to tactical vegetation fire suppression plans, within the incident command/management structure, taking into account different phases of wildfire suppression
4. liaise and communicate with the relevant people to confirm the proposed vegetation fire suppression plans
5. organise the operational and resource requirements to support the implementation of the vegetation fire suppression plans
6. contribute to the preparation of maps and checklists of the fire suppression resources available
7. contribute to the establishment and management of fire suppression contingencies
8. develop your objectives through risk assessment, including the use of the available fire danger information
9. contribute, supervise and lead the development of tactical plans that provide sufficient flexibility to meet the known and anticipated needs of the incident, in accordance with the LACES safety system
10. assess the available resources, using a realistic assessment of their suitability for operational use
11. assess the operational resources required and make adjustments to the tactical vegetation fire suppression plans, based on your initial assessment of the incident
12. confirm your objectives and deploy your resources to meet priority needs
13. check that those suppressing the fire have been adequately trained and hold current certification, where required by nation specific legislation
14. maintain the health and safety of yourself and others at all times during vegetation fire suppression, in accordance with the relevant health and safety legislation and codes of practice
15. check that the clothing and PPE worn by those suppressing the fire is suitable for the task and fit for purpose
16. within your level of authority and following any briefing from the Fire and Rescue Service, allocate tasks and responsibilities and the line of reporting for your team
17. operate within the agreed level of your responsibility and authority
18. organise, apply and give instructions on safe working practices including the implementation of the LACES safety system and JESIP doctrine

19. confirm communication methods and maintain effective communications with others throughout the vegetation fire suppression operation
20. confirm that tools and equipment are properly prepared to a safe working condition, ready for use
21. provide instructions to operators/team members to control the vegetation fire using the most relevant tools, equipment and tactics, defining tasks to suit the skills of the operators, their tools, equipment and vehicles
22. continuously monitor the effectiveness and safety of the vegetation fire suppression operation and brief incident/operations commander and operators/team members as required
23. confirm that your decisions continue to minimise risk and maximise progress towards your objectives
24. provide access for the Fire and Rescue Service and other agencies
25. redeploy your resources to meet the changing priorities of incidents
26. actively seek information to update tactical plans and progress action to meet your objectives
27. confirm the final status of the incident and agree any further action with the relevant people
28. identify any unresolved risks and hazards and take action to minimise these, within operational constraints
29. follow the required procedures in the event of an incident or emergency
30. report on the effectiveness of the vegetation fire suppression operations and contribute to a review and evaluation to learn lessons for the future
31. check that all fire suppression resources are returned securely to their correct location and any defects or deficiencies are noted for action

Knowledge and understanding

You need to know and understand:

1. the potential impact of wildfire, and fire suppression activities, on the natural environment including air and water quality, sensitive habitats, plant species, game, wildlife, natural capital, as well as property and infrastructure
2. how to use fire risk assessment techniques and systems to assess the hazards and risks of vegetation fires including risks to people, property, the environment and wildlife
3. how to make and apply decisions based on the assessment of risk
4. the purpose of, and how to interpret vegetation fire plans, fire maps, symbols, organisation working practices and the relevant codes of practice
5. your own role in planning and contributing to vegetation fire suppression plans
6. the importance of following the LACES safety system and JESIP doctrine
7. the importance of operational and resource planning and the fire suppression resources available within your organisation, the specialist Fire and Rescue Services (FRS) equipment, and local fire groups
8. the use of checklists, maps and diagrams as important management tools
9. map reading skills including of Ordnance Survey maps
10. how to contribute to the tactical planning, including for the following types of fire: heather or shrub fire, grass fire, lop and top fire, forest fire, peat fire
11. the health and safety requirements associated with vegetation fire suppression, including the relevant legislation, and how to apply practices that maximise the health, safety and welfare of yourself and others
12. the suitable fire-resistant clothing and personal protective equipment (PPE) required for use by those involved in vegetation fire suppression and the capabilities and limitations of PPE
13. the tools and equipment used, the capabilities and limitations of each when used on different types of vegetation fire, and the importance of preparation and maintenance
14. why it is important that those involved in suppressing the vegetation fire receive training, and hold current certification, where required by nation-specific legislation
15. how to allocate roles, objectives and responsibilities and the importance of following a chain of command, using systems such as the Incident Command System (ICS) and the Incident Management System (IMS)

16. how to task staff to ensure they clearly understand the aim, objective, outcomes, location, equipment, resources and tools, risk assessment and safety protocols required for effective vegetation fire suppression operations
17. the importance of maintaining effective communication with those involved in the operation and how this can be done
18. the methods for giving briefings and receiving handover information
19. the role of the Fire and Rescue Service, management functions and their roles and responsibilities, including land managers and wildfire groups, and how to identify and communicate with the incident command
20. the information on your team required by the Fire and Rescue Service or other responders
21. the relevant tools, equipment and tactics to be used during different phases of wildfire suppression
22. which of the two main vegetation fire suppression strategies to choose in different fire situations: direct and indirect attack
23. the role, purpose and selection of anchor points, firebreaks, fuel breaks and control lines
24. the purpose and value of decision making, leadership and the appropriate management structures during incidents and emergencies
25. the importance of continuously monitoring the safety and effectiveness of the vegetation fire suppression operation and how to solve problems, make decisions and plan for contingencies
26. how the weather, fuel condition and arrangement and terrain, can affect the spread, intensity and severity of vegetation fires and how changes in the weather can affect wildfires
27. how to use fuels, wind, slope and aspect, included in the Wildfire Prediction System (WiPS), to predict changes in fire behaviour, including intensity and direction
28. the role of heavy plant and aircraft in suppressing vegetation fires
29. who to liaise with to confirm the final status of the incident and agree any further action
30. the required action to take in the event of an incident or emergency and what information should be recorded
31. the importance of monitoring and maintaining fire suppression resources relevant to the risk
32. the importance of reviewing and evaluating the effectiveness of the vegetation fire suppression, and recording the lessons learned

Scope/range

Assess the potential fire hazards and fire risks in terms of:

- fuels
- slopes/topography
- potential ignition sources
- history of fires
- water sources
- existing and potential firebreaks
- assets needing protection
- anchor points

Contribute to establishing contingencies to deal with:

- changes in weather/fire behaviour
- breaches of the control line
- accidents
- problems with equipment

Glossary

- Anchor Point: An advantageous location, usually a barrier to fire spread, from which to begin constructing a control line.
- Containment - When a control line has been established around the perimeter of the fire and stopped further growth.
- Control line - An inclusive term for all constructed or natural barriers and treated fire edges used to control a fire.
- Control measure - Mitigation actions that can be taken to reduce the potential of exposure to an identified hazard.
- Controlling - Improving and securing control lines to the degree that there is no foreseeable chance of the fire escaping.
- Direct attack - An offensive fire suppression tactic that involves an attack being made at or near the fire's edge.
- Fire behaviour – The reaction of a fire to the influences of fuel, weather, and topography. Different types of fire include: smouldering, creeping, running, torching, spotting and crowning.
- Firebreak - Gaps in vegetation, which may be natural or man-made features. These include heavily grazed areas or mown tracks and rides.
- Fire danger - A general term used to express an assessment of both the fixed and variable factors of the fire environment, which determine the ease of ignition, rate of spread, difficulty of control, and impact. Fire danger is often expressed as an index.
- Fire danger rating system (Index) - A quantitative indicator of fire danger, expressed either in a relative sense or as an absolute measure. Fire danger indexes are often used to guide fire management activities.
- Fire hazard - Any situation, process, material or condition that can cause a wildfire or that can provide a ready fuel supply to augment the spread or intensity of a wildfire, all of which pose a threat to life, property or the environment.
- Fire intensity – The rate at which a fire releases energy in the form of heat at a given location and at a specific point in time, expressed as kilowatts per metre (kW/m) or kilojoules per meter per second (kJ/m/s).
- Fire risk - The probability of a wildfire occurring and its potential impact on a particular location at a particular time. Wildfire risk is calculated using the following equation: Fire risk = probability of occurrence x potential impact.
- Fire severity - A qualitative assessment of the level of heat generated by a fire/burn and the resulting impact on a fuel.
- Fire type – There are three different schemes for classifying fire type:
 1. Classification of a fire or section of fire according to the fuel level within which it occurs. For example, aerial, crown, understory, surface and ground fires.

2. Classification of a section of fire according to its position along the fire perimeter. For example, head, tail and flank fires.
 3. Classification of a fire or section of fire according to the visual characteristics it displays. For example, smouldering, creeping, backing, running, torching, spotting, crowning, fire whirl, convection driven fire etc
- Fire weather – Weather conditions that influence fire ignition, behaviour, and suppression.
 - Fireline intensity - The rate of energy release per unit length of fire front, described in kW/m.
 - Flank fire - A fire spreading or predicted to spread parallel (approximately at a right angle) to the prevailing wind direction or a slope.
 - Flanking attack - A method of fire suppression which involves attacking a wildfire along the flank or both flanks simultaneously or successively.
 - Flanks - The parts of a fire's perimeter that are roughly parallel to the main direction of spread.
 - Fuel - Any material that can support combustion within a wildfire environment. Fuel is usually measured in tonnes per hectare.
 - Fuel break - Gaps in vegetation where litter and organic materials are removed to expose mineral soil. These may include rivers, roads or control lines created with hand tools or machinery.
 - Fuel hazard - A fuel complex defined by kind, arrangement, volume, condition, and location that presents a threat of ignition and resistance to control.
 - Fuels – The classification of fuels according to their height relative to the ground surface. There are five general fuel layers: • Aerial fuels • Elevated fuels • Near surface fuels • Surface fuels • Ground fuels
 - Hazard - Anything which has the potential to cause harm.
 - Head - The most rapidly spreading portion of a fire's perimeter, usually to the leeward or up slope.
 - Heel or tail - The rearmost part of a wildfire/forest fire, it is normally out of alignment with wind and slope, and consequently will usually demonstrate less fire activity than the head fire because it usually has less support from wind or slope.
 - Indirect attack - Any suppression methods implemented away from the fire edge.
 - JESIP - Joint Emergency Service Interoperability Programme
 - Knockdown - The initial suppression work aimed at reducing the fire's intensity and slowing or stopping fire spread. Implies that the foreseeable danger of the wildfire has been significantly reduced.
 - LACES – An essential safety protocol which should be implemented at wildfire incidents to address risks and hazards. LACES is an acronym for: L = Lookouts, A = Awareness (or Anchor Point), C = Communication, E = Escape route and plan, S = Safe area
 - Landscape - The physical appearance of the land comprising of the

features of the terrain, the indigenous vegetation and the human impact caused by variations in land use.

- Likelihood - An assessment of the probability of an identified hazard resulting in a loss (normally expressed as a number 1 to 5, low to high).
- Methods of heat transfer – The process by which heat is imparted from one body or object to another. In wildfires and forest fires, heat energy is transmitted from burning to unburned fuels by: Convection, Radiation and Conduction.
- Mop up and patrol – Activity that commences after the fire has been controlled and involves extinguishing the burning area until there is no possibility of re-ignition. Patrolling the perimeter of the fire will help to ensure that the fire will not escape outside of the control lines. A fire can be called “out” after the completion of this phase.
- Observer - An individual occupying an observation tower/point or completing a patrol of a designated area who is tasked with detecting and reporting wildfires.
- Pinch attack - The tactic of attacking a wildfire by working along the flanks either simultaneously or successively from an anchor point and endeavouring to connect the two lines at the head.
- Risk - The probability (likelihood) that the harm from a hazard will be realised together with the level of resultant loss, damage or injury.
- Risk assessment - The process of establishing information regarding acceptable levels of risk and actual levels of risk posed to an individual, group, society or the environment. The process involves the identification of risk, an assessment of the likelihood of an event occurring and an assessment of the severity of the impact if it does occur.
- Risk rating - The result of multiplying the likelihood by the severity to reach a value for risk. This is then expressed as either a numeric value or simply, low, medium or high.
- Severity - An assessment of the possible outcome of an identified hazard (normally expressed as a number 1 to 5, low to high).
- Topography – The description and study of the shape and features of the land surface.
- Wildfire – Any uncontrolled vegetation fire which requires a decision or action regarding suppression. Wildfires are commonly classified according to size and/or impact upon suppression resources.
- Wildfire management plan - A site-specific plan developed to address the risk of wildfire and set out measures that will reduce or mitigate the risk and/or consequences of a wildfire. Ideally this is produced following a wildfire risk assessment.
- Wildfire management zones - The aim of wildfire management zones is to protect health and safety and important assets and infrastructure. They can provide a useful framework to help managers identify and prioritise wildfire prevention measures across a site, based on the level of wildfire risk. Wildfire management zones comprise spatial zoning of wildfire prevention measures

based on proportionality. Zone A is the Asset Zone where infrastructure must be protected from fire, Zone B is the buffer zone, where increased fuel management is carried out to protect Zones A and D. Zone C is an area of low wildfire risk where normal land management activities can be carried out. Zone D is a fire exclusion zone, where operations such as prescribed burning or suppression fires should not be permitted.

- Wildfire Prediction System (WiPS) - A recognised system for anticipating and predicting the likely behaviour of a wildfire. It is based on the consideration of wind, slope and aspect combined with fuel.
- Wildfire prevention - A collective term for all proactive activities that are implemented with the aim of reducing the occurrence, severity and spread of wildfires.
- Wildfire prevention measures - Activities directed at reducing the incidence of fires, including public education, law enforcement, personal contact, and reduction of fuel hazards (fuels management).
- Wildfire prevention plan - A scheme or programme of activities that is formulated in order to prevent wildfire incidents.
- Wildfire response plan - An area specific plan developed to set out the response required to a wildfire incident. WRPs should include information that would prove useful for Fire and Rescue Services, such as location of infrastructure, access routes, water sources, specialist equipment, contact details and site maps.
- Wildfire risk assessment - A tool for identifying fire hazards and evaluating fire risk. The process involves the identification of risk, an assessment of the likelihood of an event occurring and an assessment of the severity of the impact if it does occur.

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