

**Unit EF4: Apply hand tools to control vegetation fires.**

**Element 1.1: Prepare hand tools for vegetation fire control activities**

**Element 1.2: Use hand tools to control vegetation fires**

**About this unit:**

This unit deals with the competence required by individuals who are involved in managing vegetation fires in rural areas, either in fire suppression or prescribed burning operations.

It has been developed so that it can be applied to any area of vegetation: forest, shrub, grass or peat.

This unit is aimed at those who work in fire services, farming, forestry, game management, conservation, range land and recreation management who have a role managing vegetation fires, either on a full or part-time basis.

**To achieve it you must show that you are able to:**

- Use hand tools in a safe and competent manner
- Follow organisational fire procedures
- Operate safely on the fireground
- Support others operating on the fireground
- React appropriately, within organisational procedures, to a fire incident.

**Key words and phrases:**

For you to fully understand the content of the unit, and the activities it describes, it is important that you are able to understand the terms used within the unit. The definitions at the back of this unit should help you with this.

Anchor point	An advantageous location, usually a barrier to fire spread, where fireline construction can start. Used to minimise the chance of being flanked by the fire while the fireline is being constructed
Control line	Comprehensive term for all constructed or natural barriers and treated fire edges used to control a fire (cf. check line, firebreak, fireline, fuelbreak, scratch line, secondary line, wet line).
Hand tools	Shovels, spades, rakehoe, McLeod rakehoe, Pulaski, mattock, axe, slasher, beater / swatter, knapsack sprayer and combination tools
LACES	Lookouts, Awareness, Communications, Escape routes & Safety zones
Type of combustion	Pre-heating, active combustion, charring/glowing and smouldering
Type of vegetation	Forest, shrub, grass, peat or roots
Type of fire	Crown, surface, and ground fire

**Element 1.1:****Prepare hand tools for vegetation fire control activities****What you must be able to do:**

- 1 Make a safe working area for maintenance activities
- 2 Choose appropriate maintenance tools for the task
- 3 Maintain hand tools, in accordance with organisational / manufacturers requirements
- 4 Load and secure hand tools onto transport vehicle
- 5 Secure and store hand tools and maintenance tools safely
- 6 Prepare and check personal protective equipment
- 7 Maintain safety and health of self and others throughout

**This element covers:**

- A Preparing and maintaining hand tools using:
- (i) Hand files
  - (ii) Other maintenance tools
- B In the following situations:
- (i) A workshop
  - (ii) In the field / on operations

- C Maintaining the following types of fire control hand tools:
  - (i) Digging tools
  - (ii) Scraping tools
  - (iii) Cutting tools
  - (iv) Beating tools
  - (v) Smothering tools
  - (vi) Spraying tools
  
- D Personal Protective Equipment
  - (i) Helmet/Face shield/Goggles
  - (ii) Fire resistant clothing
  - (iii) Gloves
  - (iv) Heat resistant boots
  - (v) Drinking water
  
- E Equipment used to secure items on transport vehicles
  - (i) Ropes
  - (ii) Straps

**What you must know and understand:**

- a. Safe use of maintenance tools
- b. How to maintain hand tools used for controlling fires
- c. Techniques for securing equipment in a variety of situations

**Use hand tools to control vegetation fires**

**What you must be able to do:**

- 1 Assess the fire environment logically and predict local fire behaviour
- 2 Use hand tools to control vegetation fire safely and within organisational procedures
- 3 Mop up and patrol following a vegetation fire
- 4 Operate as part of a team with a combination of hand tools, used in rotation, within organisational procedures

**This element covers:**

- A
  - (i) Digging
  - (ii) Scraping
  - (iii) Cutting
  - (iv) Beating
  - (v) Smothering
  - (vi) Spraying
  
- B
  - (i) Ground fire
  - (ii) Surface fire
  - (iii) Crown fire
  
- C
  - (i) Knockdown
  - (ii) Containment
  - (iii) Mop up and patrol
  
- D
  - (i) Direct attack
  - (ii) Indirect attack

**What you must know and understand:**

- a. The information that can be gathered on fire behaviour from observation of the fire and the fire environment, including: flame lengths, smoke, wind, fuels, aspect and topography
- b. How to assess and analyse the information on observed fire behaviour logically, including the identification of hazards and other safety issues
- c. The role of lookouts, the importance of being aware of the fire situation and being able to communicate with team members and your supervisor at all times. Knowing where your escape routes are, as well as when to use them and how long it will take to reach your designated safety zones (LACES)
- d. How to construct and place a control line correctly and efficiently in varied terrain, according to organisational procedures
- e. The capabilities and limitations of hand tools used individually and in combination, with other hand tools, ignition devices, pumps and aircraft as part of a fire control team

- f. How to select the correct tools for the fuel type, height and thickness of vegetation and other influences on the efficiency of the operation
- g. The methods of using hand tools efficiently, safely and within organisational procedures

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