

Title	Demonstrate knowledge of the fire environment on vegetation fire behaviour		
Level	4	Credits	3

Purpose	<p>People credited with this unit standard are able to:</p> <ul style="list-style-type: none"> - explain the types and anatomy of vegetation fires; - explain the effects of topography on vegetation fire behaviour; - demonstrate knowledge of the effects of fuels on vegetation fire behaviour; - demonstrate knowledge of effects of weather on vegetation fire behaviour; and - explain the combined effects of fire environment factors on vegetation fire behaviour.
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Classification	Fire and Rescue Services > Fire and Rescue Services - Vegetation
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Available grade	Achieved
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Guidance Information

- 1 Assessment against all outcomes must be in accordance with the fire and emergency agency's requirements.
- 2 Definition
Fire and emergency agency's requirements refer to policies, procedures and supporting documents on safety and aircraft operations set down by each fire and emergency agency employer or host organisation.

Outcomes and performance criteria

Outcome 1

Explain the types and anatomy of vegetation fires.

Performance criteria

- 1.1 Types of vegetation fire are explained.
Range underground fire, surface fire, crown fires.

1.2 The anatomy of a vegetation fire is explained.

Range bay, finger, flanks, head, backing, area of origin, burnt-out area, spot fire.

Outcome 2

Explain the effects of topography on vegetation fire behaviour.

Performance criteria

2.1 The effects of slope steepness on fire behaviour are explained.

Range rate of spread, fire intensity.

2.2 The effects of elevation on fire behaviour are explained.

Range climatic conditions, fuel type, fuel condition.

2.3 The effects of aspect on fire behaviour are explained.

2.4 The effects of land formation on fire behaviour are explained.

Range rate of spread, direction, fire intensity, shape.

Outcome 3

Demonstrate knowledge of the effects of fuels on vegetation fire behaviour.

Performance criteria

3.1 Fuel factors are defined.

Range type, total fuel load, available fuel load, moisture content, arrangement, continuity, size and shape, condition.

3.2 The factors influencing fuels are explained.

Range seasonal, climatic, diurnal variations.

3.3 The effects of variation in fuel factors are explained.

Range rate of spread, direction, intensity, shape.

Outcome 4

Demonstrate knowledge of the effects of weather on vegetation fire behaviour.

Performance criteria

- 4.1 Weather features are identified on weather maps, and explained in terms of their effects on weather patterns.
- Range isobars, anticyclone, depression, fronts.
- 4.2 Influences on wind types and wind speeds are explained.
- Range land forms, weather patterns, diurnal variations, sea breeze effects.
- 4.3 The effects of weather and changes in weather on fire behaviour are explained in terms of fire direction, fire intensity, fire size, and fire rate of spread.
- Range temperature, relative humidity, diurnal variation, precipitation, atmospheric stability, wind speed and direction.

Outcome 5

Explain the combined effects of fire environment factors on vegetation fire behaviour.

Performance criteria

- 5.1 The combined effects of fire environment factors on vegetation fire behaviour are explained.
- Range fire development, potential changes.

Planned review date	31 December 2026
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	30 April 1998	31 December 2023
Review	2	25 March 2004	31 December 2023
Revision	3	20 November 2006	31 December 2023
Review	4	20 November 2009	31 December 2023
Review	5	30 September 2021	N/A

Consent and Moderation Requirements (CMR) reference	0039
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact The Skills Organisation reviewcomments@skills.org.nz if you wish to suggest changes to the content of this unit standard.