



Australian Government

PUAFIR414 Interpret and analyse fire weather information

Release 2

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Modification History

Release	TP Version	Comments
2	PUA12 V2.1	Editorial changes.
1	PUA12 V2	New unit.

Unit Descriptor

This unit covers the competency required to assess and interpret weather information in relation to its impact on fire behaviour.

No licensing, legislative, regulatory or certification requirements apply to this unit at the time of publication

Application of the Unit

This unit applies to personnel working in a Situation Unit at an incident who are required to provide weather predictions to the planning function.

Licensing/Regulatory Information

Not applicable.

Pre-Requisites

Not applicable.

Employability Skills Information

This unit contains employability skills.

Elements and Performance Criteria Pre-Content

Elements describe the essential outcomes of a Unit of Competency.

Performance Criteria describe the required performance needed to demonstrate achievement of the element. Where ***bold italicised*** text is used, further information is detailed in the Range Statement. Assessment of performance is to be consistent with the Evidence Guide.

Elements and Performance Criteria

ELEMENT

PERFORMANCE CRITERIA

1. Collect weather information

- 1.1 ***Sources of relevant weather information*** are identified and accessed.
- 1.2 Site information is sought from relevant databases or experts.
- 1.3 General ***meteorological data*** is obtained.
- 1.4 ***Field observations*** are obtained and monitored.

2. Interpret weather information

- 2.1 Meteorological data is interpreted in terms of likely current weather conditions for an area.
- 2.2 Bureau of Meteorology ***weather forecasts*** and warnings are interpreted in terms of future weather conditions for an area.
- 2.3 Field weather observations that are relevant to weather predictions are assessed.
- 2.4 ***Local weather influences most likely to affect fire weather conditions*** are identified.
- 2.5 Weather forecasts are validated against field weather observations as they become available.
- 2.6 Weather forecasts are evaluated in terms of their effect on fire behaviour.

3. Analyse, record and communicate fire weather information

- 3.1 Analysis is conducted using consideration of ***weather analysis, weather signs***, local weather influences and the likely impact on ***fire behaviour***.
- 3.2 Planning the control of the incident is facilitated through quality, timeliness and presentation of information.
- 3.3 Fire behaviour and weather conditions are monitored and potential changes to fire predictions are assessed and reported.
- 3.4 Analysis and advice are provided to Situation Unit and Planning Officer .

Required Skills and Knowledge

This describes the essential skills and knowledge and their level, required for this unit.

Required Skills

- access weather recording data, weather maps and web-based weather products
- implement strategic risk analysis techniques
- interpret fire weather source data
- interpret topographic maps in order to assess effects on weather
- manage data and maintain accurate records
- use and interpret weather maps

Required Knowledge

- effects of topography on weather and fire behaviour
- fire behaviour factors
- observation, analysis and interpretation of weather signs
- sources of data relating to weather and fire behaviour

Evidence Guide

The evidence guide provides advice on assessment and must be read in conjunction with the Performance Criteria, Required Skills and Knowledge, the Range Statement and the Assessment Guidelines for this Training Package.

Critical aspects for assessment and evidence required to demonstrate competency in this unit

Assessment must confirm the ability to:

- provide (for use by the Incident Management Team to plan the control of a wildfire) an accurate analysis and projection of weather affecting a local area and the probable impact on fire behaviour.

Consistency in performance

Competency should be demonstrated over time in actual and/or simulated workplace environments.

Context of and specific resources for assessment

Context of assessment

Competency should be assessed in an operational environment or in an agency-approved simulated workplace environment.

Specific resources for assessment

Access is required to:

- range of actual or simulated conditions
- range of sources of information related to weather conditions and fire behaviour
- agency templates for weather recording

Method of assessment

In a public safety environment assessment is usually conducted via direct observation in a training environment or in the workplace via subject matter supervision and/or mentoring, which is typically recorded in a competency workbook.

Assessment is completed using appropriately qualified assessors who select the most appropriate method of assessment.

Assessment may occur in an operational environment or in an agency-approved simulated work environment. Forms of assessment that are typically used include:

- direct observation
- interviewing the candidate
- journals and workplace documentation
- third party reports from supervisors
- written or oral questions

Range Statement

The Range Statement relates to the Unit of Competency as a whole. It allows for different work environments and situations that may affect performance. ***Bold italicised*** wording in the Performance Criteria is detailed below.

<i>Sources of relevant weather information</i> may include:	• air or ground observations • automated weather stations (fixed and portable) • Bureau of Meteorology websites and/or fire weather experts • emergency services and land managers • fire ground/operational personnel • media (newspapers, radio, internet) • persons with local knowledge
<i>Meteorological data</i> may include:	• aerological diagrams • air temperature • barometric pressure • dewpoint • lightning • precipitation • radar images • relative humidity • satellite images • snowfall • synoptic charts • weather forecasts and warnings • weather model guidance • wind (speed, direction, gust)
<i>Field observations</i> may include:	• cloud (type and cover) • dew point • fire behaviour (rate of spread, flame height and spotting) • fuel moisture content • temperature and relative humidity • wind speed, direction and gust
<i>Weather forecasts</i> may include:	• district forecasts • fire weather forecasts • special/spot weather forecasts • temperature and relative humidity • warnings (fire weather, severe weather, thunderstorm)
<i>Local weather influences most likely to affect fire weather conditions</i> may	• altitude /elevation • bodies of water • distance from coast

include:	• dry air subsidence inversion • Foehn winds • katabatic and anabatic winds • sea breezes and land breezes • slope and aspect • wind channelling
Weather analysis may include:	• atmospheric stability • Bureau of Meteorology products and tools • diurnal cycles • drought indices • El Niño and La Niña effects • fire danger indices • Haines index • long-term weather cycles • seasonal cycles • smoke dispersion • southern oscillation index • temperature inversions • wind changes
Weather signs may include:	• changes in air temperature • changes in barometric pressure changes • changes in wind direction and velocity • cloud formation and patterns • cold fronts • smoke behaviour from other recent fires in the area • thunderstorms
Fire behaviour may include:	• fire perimeter • fire size/growth/shape • fire whirls • flame characteristics (height and depth) • heat output and intensity • junction zones • rate of spread • smoke • spotting

Unit Sector(s)

Not applicable.