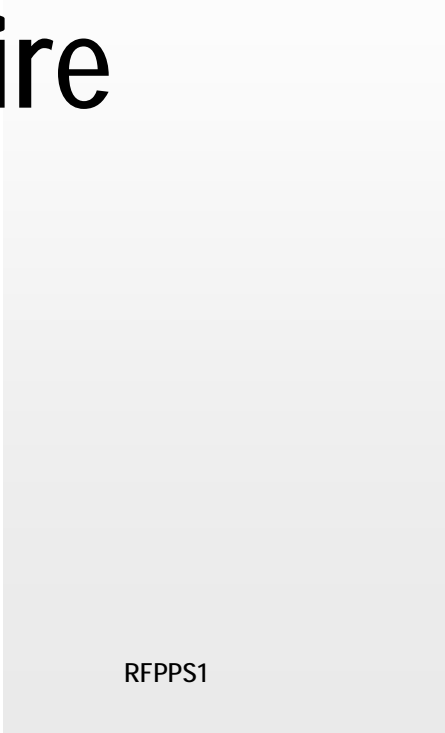




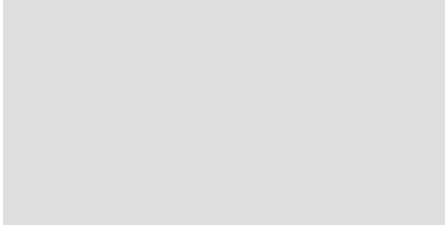
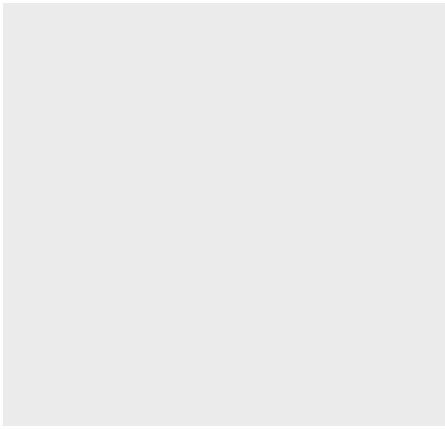
Rural Firefighting

Study Guide

Protect and Preserve a Fire Scene



RFPPS1



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Study Guide Introduction

Overview	This study guide supports unit standard 20392, Protect and Preserve a Fire Scene, version 2.
Course objectives	The general objectives of this course are: <ul style="list-style-type: none">• demonstrate knowledge of fire scene preservation• identify and report evidence for the purpose of supporting fire investigation• secure a fire-affecting scene
Course outline	This learning resource focuses on the knowledge and skills required by personnel to protect and preserve a fire scene. The study guide is taught by distance education.
Entry requirements	It is recommended to have an understanding of the vegetation fire environment to achieve this unit. It is recommended although not a requirement to have completed unit standard 14564, Knowledge of vegetation fire behaviour, or demonstrate equivalent knowledge and skills.
How this is assessed	There is a written and practical assessment for this course. You will be assessed on the theory outlined in this study guide.
Additional information	For a comprehensive set of definitions see the Rural Fire Management Glossary of Terms at www.nrfa.org.nz .

Section 1: Introduction

Why protect and preserve the fire scene?

All vegetation fires need to be investigated to determine their origin and cause.

The investigation may be short and simple, with both origin and cause of the fire being easily identified, and quickly recorded, by the first response crew leader.

Alternatively the first response crew leader may recommend to the relevant fire authority Principal Rural Fire Officer (PRFO) that a Specialist Fire Investigator carry out a more detailed investigation. If the cause of each fire incident is determined and recorded:

- it is much easier to identify any prevention/public education measures
- if an investigation identifies individual(s) responsible, it may also result in actions to recover the costs of suppression

What does protect and preserve mean?

Protect means: to keep safe, defend, or guard or shield from harm.

Preserve means: (1) keep safe (2) maintain in its present state.

["The Concise Oxford Dictionary"]

Why protect and preserve a fire scene

The reasons to protect a fire scene include:

- that it could be a crime scene
- to reduce the incidence and consequence of fire
- future fire investigation
- promotion and education

Your role is to observe, note and photo/sketch.

Fire authorities

Fire authorities have a statutory duty¹ to make every effort to reduce the incidence and consequences of fires.

¹ See the *Forest and Rural Fires Act 1977* and the *Fire Services Act 1975*

Note

Fire investigation helps measure the effectiveness of fire prevention programs. A proper fire investigation can help establish the cause of wildfires.

This can help accurately determine where our *education* and *extension* programmes should be directed, and also help us recover the costs of suppression and damage caused by wildfires (*compliance*).

To establish any of the above, all personnel involved in response to wildfires need to be aware of what they can contribute to an investigation.

Responsibilities

What is the role of initial responding crews?

Introduction

The initial responding crew is responsible for fire suppression and protecting and preserving the fire scene.

Initial responding crews

- be professional
- on the way to a scene note relevant circumstances including fire behaviour
- observe and note people and vehicles while travelling to, and when arriving at the fire
- take steps to identify and preserve the area of origin and any other relevant evidence at or near the scene of the fire
- assign tasks to the crew

Initial Fire Responders

Initial Fire Responders	Tasks
Dispatch	
Make observations en route of: - cars, people, fire	Log Take Photos
Incident	
Identify general area of origin	Log Sketch (if possible)
Protect, preserve and control access to fire scene	Erect Barrier Tape Guard
Make observations – weather, cars, people, fire behavior, signs of activities that may have contributed to a fire cause	Log Take Photos
Notify K12 (suspicious fire) if appropriate	Log
Identify witnesses	Log
Note items of interest	Log
Collate, store and inform by taking notes, photos, sketches (if possible) or any other information gathered during the initial response, and inform PFRO and/or IC	Report/sketch
Advise the RFA if:	
<ul style="list-style-type: none"> • injury or death at scene • initial observations identifies suspicious circumstances • large fire • where fire origin and cause is not obvious 	

Wildfire Protect and Preserve Prompt Sheet

This prompt sheet is one of the tools you'll need on-the-job.

On arrival	<ul style="list-style-type: none"> size up the fire 	
	<ul style="list-style-type: none"> identify and protect the general area of origin – 	
	<ul style="list-style-type: none"> task the crew and reinforce the need to stay out of area of origin 	
Observation	<ul style="list-style-type: none"> use low pressure delivery in the area of origin 	
	<ul style="list-style-type: none"> general observations at the fire scene 	
Protect any evidence	<ul style="list-style-type: none"> cordon off the area of origin (with tape) and sketch position, photographs, note all information. Do not enter the cordon. 	
Sketch diagrams	<ul style="list-style-type: none"> take photographs and note the location they were taken from. (use CIMS incident management organiser or similar). At the fire scene (mark location of features, distances, direction of fire spread, wind direction, wind changes, general area of origin and any evidence found). 	
Identify witnesses	<ul style="list-style-type: none"> firefighters, workers, neighbours, recreational persons, and bystanders - note their observations. Record details as given (name, address and phone number if possible). 	
Situation Report	<ul style="list-style-type: none"> completed and PRFO is notified. Ensure that relevant information is included in the fire report. 	
Fire Report	<ul style="list-style-type: none"> ensure that relevant and factual information relevant to probable area of origin and cause is included in the fire report. 	

The first five minutes of a size up may be worth more than the next five hours.

Section 2: Practices and Procedures

Introduction

Identifying practices and procedures for:

- on the way to the fire
- arrive at scene
- making observations of people
- observations at scene
- protect the general area of origin
- crew safety

On the way to a fire

On the way to a fire

Remind crew of:

- scene preservation (Use low pressure delivery/spray around area of origin if suppression is required)
- initial attack areas
- general observations of people, vehicles and any other things of interest
- instruct them not to give information to the public and media on cause of the fire

Arrival at fire

Arrive at scene

A larger area cordoned off is better than too small. It is better to have a physical or visual barrier to secure the area of origin; cordon tape is the preferred way for doing this. Limit mop up in the cordon area, only proceed where life and property is at risk.

There may be multiple points of ignition that may need to be cordoned off. Car tracks, footprints, motorbike tracks may also need to be cordoned off.

Make sure that it is safe to cordon the area or areas, ensure that there are no hazards. Stay out of the cordon area yourself.

Make sure that no person should alter or remove anything from the scene including landowner, occupier etc.



Figure 2.1 - Cordoning off the fire scene

Making observations of people

Record name, contact phone number and information provided by people who speak to you. Ask the question 'Do you know what happened?' if they say yes ask when, where, what, how and who and advise them that they could be contacted at a later date.

You must not talk to the media or public on any theories regarding the cause of the fire. If the person you are talking to makes an admission take reasonable notes about what they have to say.

Protect and preserve a fire scene

Observations

Record/note:

- the general direction of fire travel
- the boundaries of the fire
- local weather conditions at the time of the fire
- the proximity of roads, tracks or any other features in the area
- the general area of origin
- note anything within or adjacent to the fire scene which may be associated with the cause and/or the person(s) responsible
- the perimeter of the fire, or that portion around the area of origin, including the access routes
- vehicle tracks and human activity
- discarded objects
- take notes and photographs and make sketches (if possible) that detail the location of the fire, its perimeter and any relevant features or reference points
- note items or objects that may be related to the cause of the fire

Remember

Whatever you have touched, wherever you have been, you have altered the way it was.

Protect the general area of origin

Protect the general area of origin

Use a rope or barrier tape to cordon off the general area of origin. If necessary place a person at the site to prevent or direct entry into the area.

Crew Safety

Your duty is to extinguish the fire and maintaining safety while minimising damage to the scene. This ensures that your actions do not remove or wipe out evidence, or in any way inhibit later investigations.



Figure 2.2 - Extinguishing the fire

Make sure that crew maintain safety standards when at a fire scene e.g. LACES observed.

Be aware of hazards and take appropriate safety measures.

Structural hazards	Most structures involved in fires are structurally weakened e.g. hay sheds or poles. Be aware and notify crew of hazard.
Biological hazards	Biological hazards include hazards that can affect the health of those at the scene. Chemicals (pesticides) and fire products (smoke and gasses) that may be toxic. The hazards can be minimised by cordoning the area off.
Environmental hazards	Falling spars, rock falls, terrain, weather conditions including wind conditions need to be considered when working on a fire site. Changing weather conditions e.g. snow, rain and/or wind can destroy or modify the area of origin at a fire scene. This increases the value of taking photos as soon as possible

- Utilities hazards** Powerlines are a danger and need to be treated as live, roads and train lines are hazards that you need to be aware of. Other organisations with a vested interest may need to be kept out of the fire scene (power companies, rail and insurance companies).
- Re-ignition hazards** The hazard caused by fire re-ignition is a significant risk to personnel. This means that you must conduct and maintain a careful fire watch. This may mean a change of suppression techniques.
- Operational hazards** Helicopters, machinery, off road appliances, need to be aware of where these are operating and that they also do not disturb the area of origin.

Useful resources to have

Useful resources to have To conduct a visual examination the following resources may prove to be useful.

List of resources	
Item	Use
Watch	For timing of events, calls, and objects found
Notebook	For recording of events, calls, and objects found
Barrier tape/rope, electric fence pig tails	For protection of scene
Tape measure/GPS unit	For distances from road edge, gate etc
Camera (disposable/digital)	For photos of scene
Checklists, prompt sheet	To ensure processes followed correctly

Taking Notes

- Why take notes?** Notes aid your memory. They provide a reference when pursuing avenues of enquiry.
- If there is any litigation at a later date you notes could be used as evidence.
- Record of sequence of events and fire activity.

When to record Notes should be made at the time or at least immediately after the incident.

The closer to the time of events that notes are written (and dated) the more validity that supports your findings.

Note Keep notes relevant and factual (no conjecture or making derogatory notes on people). Keep notes professional. Remember that these could be used in evidence if there is any litigation at a later date,

Photographs

Why take photos Photos are a valuable tool to aid observations as they:

- are the best method of reproducing a scene and can record facts more accurately than word descriptions
- they pictorially preserve perishable evidence

What to photograph Take a series of photographs, including:

- at least four photographs which depict the **overall scene** (where possible, aerial photographs to use in conjunction with those taken on the ground)
- several photographs taken at medium distance and which show points of reference and any features of significance.
- any other photos of points of interest

Don't feel that you need to limit number of photographs, it is better to take more than you need then less.

Recording photographic information Record in log approximate direction and details of photograph and/or include in sketch. Record the time that the photograph was taken and the name of the person taking photos.. One way of doing this is to record in a notebook. Photographs that you have taken can also be put on a sketch of the fire scene.

Photo Log-example

Day: Thursday Date: 17/3/95 Fire No: Portland #12				
Location: St.Kitts Road, St.Helens, Property of J.A.Youl				
Photo	Time	Location	Direction	Subject
1.	1600	St.Kitts Road SW Corner of fire	N	West boundary.
2.	1604	St.Kitts Road NW Corner of fire	S	West boundary.
3.	1605	St.Kitts Road. NW Corner of fire	E	North boundary Tractor.
4.	1607	North boundary 50m E St.Kitts Rd	SW	North boundary. Tractor. Unburnt vegetation adjacent.
5.	1610	North boundary 60m E St.Kitts Rd.	SE	Char line on Redgum tree
6.	1615	NE Corner 90m E St.Kitts Rd	W	North boundary. Fence (N-S). Fire break.
7.	1620	20m S of NE cnr	S	East boundary. Fence (N-S). Char on fence post.
8.	1630	60m S of NE cnr	S	East boundary. Fence junction. Plantation. Scorch in foliage. Char on fence post. Char on tree trunks.

The above could also be done on a sketch of the fire scene. An example of a sketch is shown later in this study guide, Use numbering on the sketch to show the location that the photograph was taken in.

Storing photographs

Photographs that are taken need to be downloaded and stored in a secure location. A backup could be useful to make as well. The photographs and notes need to be accessible as it could be some time later that this may be required by the fire investigator and/or lawyers.

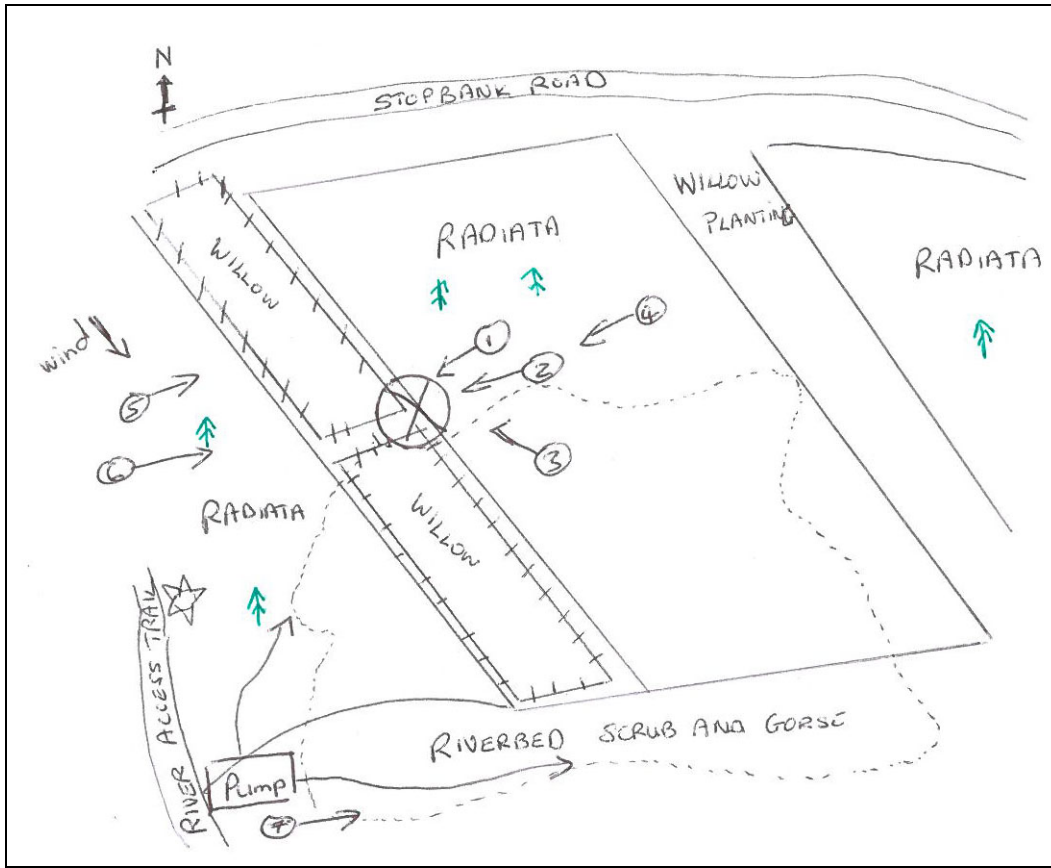
Note

Photos of the scene once lost cannot be replaced.










Sketch of fire scene

Making sketches	<p>If possible a sketch of the fire scene should be done. Ideally this is during the early stages of suppression if possible/practical task someone to do the diagram.</p> <p>Make at least one clear diagram of the fire scene, illustrating:</p> <ul style="list-style-type: none">• important features and their proximity to others• direction showing north• the wind direction at the time of the fire, and any subsequent wind changes• the general area of origin and direction of spread• the location from which photographs were taken (it's usually clearer to produce a separate sketch to illustrate the direction and location from which photographs were taken)
Symbols and legends	<p>Symbols used on sketches should be clear and identified by a legend.</p>
Note	<p>Ensure IC or PRFO are aware that photographs are available for the fire investigator if required.</p>

Sketch pad



Legend (not all legend codes need to be used)

General area of origin		Building	
Fire Edge		Rail Line	
Fence Line		Track or road	
Photo shoot		ICP initial attack	
Hoselines		Wind direction	