

PART TWO

PLANNING AND PREPARATION

5 PLANNING FOR FORESTRY OPERATIONS

6 RISK MANAGEMENT ESSENTIALS

5 PLANNING FOR FORESTRY OPERATIONS

Planning for forestry operations has three levels.

The first and highest level relates to the **plan for the harvesting process**. Here the roles and responsibilities of those in the production cycle should be outlined and understood. Planning is longer term and defines the type of operations to be conducted and the intrinsic safety issues to be encountered.

The second level is the **health and safety management system**, which outlines the policies and procedures operators use in all their work. The system may be codified in a company manual and procedures. The system needs to be commensurate with the risk of the work activities.

Different terms may be used to describe a health and safety management system. The Forest Products Commission, for example, uses 'safety management plan (SMP)'. The terms 'safety system' and 'safety plan' often describe the way a company has organised its measures to manage risk.

The third level relates to the work site where harvesting operations take place and where a **site safety plan (SSP)** is applied. The SSP translates the higher-level planning information and the operation-specific systems and procedures to a particular location and activity.

The best safety outcomes will be achieved where each planning level is coordinated and consistent in its approach to managing risks.

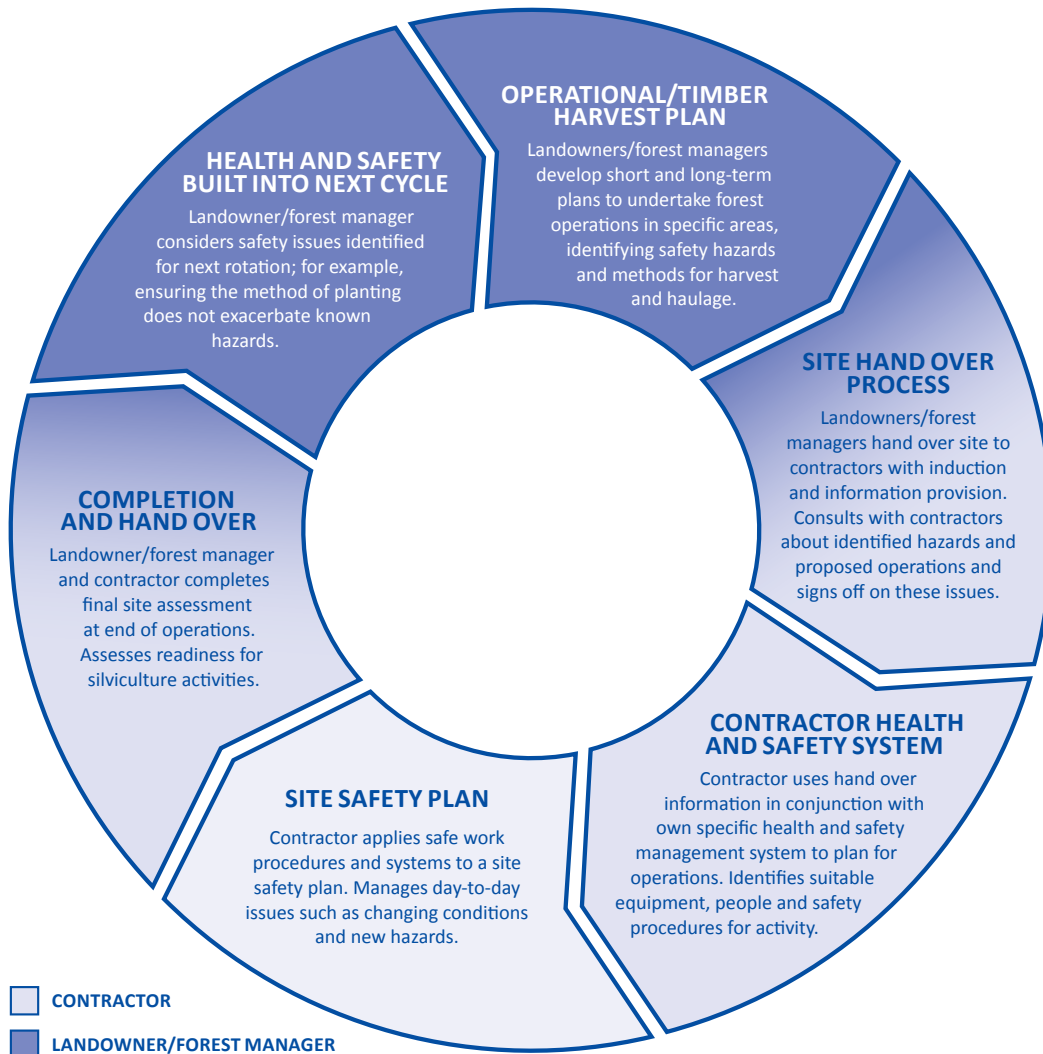
5.1 Planning throughout a forestry operation

Different duty holders have different planning responsibilities throughout a forestry operation – from the planning stage to the operational stage. These include the:

- environmental and other constraints on the operation
- longer-term planning responsibilities of landowners and forest managers
- operational planning responsibilities of landowners and forest managers, including identifying site-specific hazards
- contractor responsibilities, including following site-specific safety procedures and applying their own procedures to manage their activities (e.g. selecting suitable equipment and personnel)
- completion and hand over responsibilities, which bring the cycle back to the planning stage as hazards and issues found are recorded for future operations.

Figure 6 shows the different planning stages throughout the operational cycle of a forestry operation.

Figure 6: Roles in the planning cycle



5.2 Responsibilities for landowners

As a person conducting a business or undertaking (PCBU), the landowner should ensure operations are well planned. This includes considering issues that will affect work tasks, such as:

- location of roads and log landings
- timing of harvesting
- any environmental constraints
- higher risk forest types (e.g. fire damaged trees)
- suitability of methods and equipment.

They should provide information to forest managers or contractors on known hazards such as infrastructure, slope, soil type, and tree hazards.

If the landowner is engaging contractors, the responsibilities in *Section 5.3* also apply.

5.3 Responsibilities for forest managers who engage contractors

As a PCBU, the forest manager should pass on information about hazards and planning issues to contractors and ensure:

- hazards identified by landowner have been risk assessed
- contractors are selected who meet workplace health and safety requirements and are suitable for the type of work
- contractors are fully consulted and given the opportunity to assess how operations can be done safely at hand over stage
- work can be done safely in the allocated time
- organisation-wide emergency procedures have been established
- a site-wide traffic management plan is in place
- the health and safety performance of contractors is monitored.

5.4 Responsibilities for contractors

As a PCBU, the contractor must plan to safely complete the agreed tasks. These might include preparing the site, planting or **felling** trees, and extracting, processing, and transporting product from the **coupe**.

The contractor must address hazards identified during the forest manager's hand over in a site safety plan.

The contractor's health and safety management system should also ensure:

- workers are suitably trained and equipped to do the job safely
- information on hazards such as chemicals is accessible to users
- safe work procedures are applied to the specific risks of their operations
- workers are consulted on risks, safe work practices, and any changes to such practices
- plant is suitable for the task and able to be operated within its safe working limits
- work is actively supervised and monitored
- a safe working environment is maintained
- plant is regularly inspected and maintained
- specific communication and emergency procedures are established and tested
- suitable first aid and amenities are provided
- incidents are reported, investigated and recorded.

5.5 Planning with a health and safety management system

A health and safety management system is a methodical way of managing, documenting, and verifying how the PCBU manages risk.

For a forest manager or contractor, it details how the identified hazards and associated risks of the operation are to be managed. It is a planned and repeatable method that is reflected in allocated roles and responsibilities, safe work procedures, and use of trained staff and suitable equipment. A system can range from a formally documented system (e.g. certifiable system) to a fit-for-purpose contractor manual.

Any system should be commensurate with the risks to be managed (see *Section 4.6*) and focused on the critical hazards of forestry operations (see *Section 6.1*).

All the elements listed here are detailed in *Section 6 Risk management essentials for all forestry operations*, particularly *Section 6.2 Risk control essentials* and *Section 6.3 Risk management supports*.

A health and safety management system should be in an accessible form for its users. For example, safe work procedures must use a format and language that everyone understands. The system should also be reviewed by those who depend on it.

Figure 7 illustrates the elements of a health and safety management system.




Figure 7: Elements of a health and safety management system



A health and safety management system is the foundation for activity or job-specific procedures, rules, and directions. Safe work procedures detail how risks are to be managed and include specific risk controls for workers to apply. These are the basic documents in any health and safety management system. See *Figure 8* for a sample format.

Figure 8: Template for a safe work procedure (worked example)

SAFE WORK PROCEDURE CONTRACTOR SAMPLE	
SAFE WORK PROCEDURE – EXCAVATOR OPERATION	
Version:	Reviewed: ../../.. Page 1 of 3

OPERATION SCOPE	
<p><i>Set out the tasks to be undertaken, such as:</i></p> <p>Operator must:</p> <ul style="list-style-type: none"> ▪ Debark the logs, then stack, segregate, and load them onto log trucks. ▪ Cross-cut logs to maximise the value harvested from the coupe. ▪ Perform daily maintenance including checking fluid levels, refuelling, adding oils, and cleaning tracks and cabin. ▪ Do minor repairs including repairing hydraulic hoses and changing beak attachments. 	
GENERAL RULES	
<p><i>Set out any basic rules, such as:</i></p> <p>No item of plant or equipment is to be used if:</p> <ul style="list-style-type: none"> ▪ It is tagged with a 'Do Not Operate' tag. ▪ Its scheduled maintenance date has passed. ▪ It is considered unsafe by the person who is to use it. ▪ The person who is to use it has not been trained in its use. 	
 COMPETENCIES No person will do this job, task or activity unless they meet specified competency standards.	
<p><i>Include relevant operator competency reference, such as:</i></p> <p>FWPHAR3225 Operate Excavator with Log Grapple</p>	<p>FWPHAR2209 Trim and Cut Harvested Trees</p>
Environmental Care Certificate	Workplace Health and Safety Certificate
Contractor Induction Manual	
 EQUIPMENT REQUIREMENT	
Excavator	Chainsaw, fuel container, axe, wedges, files, and plug spanner
 PERSONAL PROTECTIVE EQUIPMENT (PPE) REQUIREMENTS For additional protection, you must wear the following PPE.	
Safety helmet while working outside the machine	Safety footwear
<p>Safety gloves:</p> <ul style="list-style-type: none"> ▪ Leather gloves when handling chains and ropes ▪ PVC gloves when handling fuels and oils 	High-visibility clothing
	Eye protection when using a chainsaw
	Cut-resistant leg protection when using a chainsaw

SAFE WORK PROCEDURE CONTRACTOR SAMPLE		
SAFE WORK PROCEDURE – EXCAVATOR OPERATION		
Version:	Reviewed: ../../..	Page 2 of 3

 **EXCLUSION ZONES AND SAFE WORK ZONES**

You must keep people out of your exclusion zone to ensure that you do not cause a striking or crushing injury to other people and machines. If anyone enters your work zone, you must cease operations immediately.

You must not enter into anyone’s exclusion zone without requesting and receiving permission to enter via the UHF radio.

Set out exclusion zones and safe work zones for particular tasks and settings where the use of this equipment interacts with other operations (e.g. log landing).

Example





Log processors, log graders, supervisors and other workers

Ensure no-one enters an area described by the full swing radius, plus the log length in the beak, while the machine is operating. Where practical, ensure there is a physical barrier (e.g. log stack or another machine) between the area where these people work and your work area. If this is not practical, they should be no closer than 30 metres to your point of operation, in case debris or a chain link flies from your cut off saw.

COMMON HAZARDS:

List the hazards most likely to cause injury during this task and what you need to do to protect yourself.

Refer to the Code sections on common hazards and on specific operations (e.g. harvesting or log extraction).





TASK EXAMPLE	 HAZARD	 CONTROL
Climbing in and out of operating cabin or onto back of machine.	Slips, trips, and falls.	<ul style="list-style-type: none"> ▪ Ensure all handrails and steps are in good condition and report any problems on the pre-operational checklist. ▪ Ensure that all non-slip surfaces are in good condition. ▪ Keep steps and cabin clean and regularly remove any build-up of mud. ▪ Ensure you have 3 points of your body in contact with the machine when you climb in and out. (see Photo)

SAFE WORK PROCEDURE CONTRACTOR SAMPLE		
SAFE WORK PROCEDURE – EXCAVATOR OPERATION		
Version:	Reviewed: ../../..	Page 3 of 3

SUPPORTING DOCUMENTS All operations must be done in line with the following documents.		
All decals (stickers) attached to machinery		
Operator’s manual for excavator Operator’s manual for chainsaw		
FIFWA Forestry Safety Code (2024)		
Safety data sheets for:		
Diesel, hydraulic oil, 2 stroke, and engine oil		
RECORD-KEEPING REQUIREMENTS Please indicate which records need to be kept.		
Set out any record-keeping requirements, such as: <ul style="list-style-type: none"> ▪ risk assessments for high-risk areas like log landings ▪ required equipment checklists like a daily plant checklist or chainsaw checklist. 		
001	First edition	DATE
Authorised by:		Manager’s name
This document will be formally reviewed every three years and ad-hoc changes will be made based on audits, incident investigations, or suggestions from toolbox meetings. All changes must be authorised by the named manager.		

At an industry level many forest managers and contractors have adopted the Safe and Skilled Life Saving Commitments, which aim to improve worker compliance and change safety behaviours. These could be adopted and addressed in standard induction procedures.

In *Section 15.5*, each commitment is cross-referenced with supporting parts of this Code.

 <p>NEVER work near hazardous trees</p>   <p>6 Risk management essentials 6.2.2 Exclusion zones and safe work areas 14.3 Hazardous trees</p>	<p> The 'Never work near hazardous trees' commitment is shown with the sections of the Code that support this commitment.</p> <p><i>Section 6</i> identifies hazardous trees as a critical hazard that must be managed in all forestry work. This is supported through training, communication protocols, felling techniques, and safe work procedures.</p> <p><i>Section 6.2.2 Exclusion zones and safe work areas</i> outlines the ways workers can be protected through separation methods and reference to site safety plans.</p> <p><i>Section 14.3 Hazardous trees</i> outlines the characteristics of such trees, with associated risk factors and risk controls.</p>
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5.6 Site safety plans

A site safety plan (SSP) is a written plan that brings the planning process to a particular location at a particular time.

It covers the specific activities that the contractor will perform at a specific work site. It aims to protect the health and safety of workers, authorised visitors, contractors, and other people on that site.

An SSP's purpose is twofold. First, it should identify potential site hazards. Then, it should specify safe work procedures to mitigate those hazards and prevent accidents and injuries.

It should begin at the harvest plan or operational stage where the landowner and forest manager outline:

- the hazards and risks of the site
- the people, equipment, and processes required to complete the work in a safe and healthy way.

Initial information about site-specific hazards and risks should be passed on to any contractors in the hand over stage. As shown in *Figure 9*, the contractors in turn apply that information to their own SSP. The plan should really act like a passport that outlines conditions of access and operation, and the emergency response.

Figure 9: Information flow through planning and operational stages

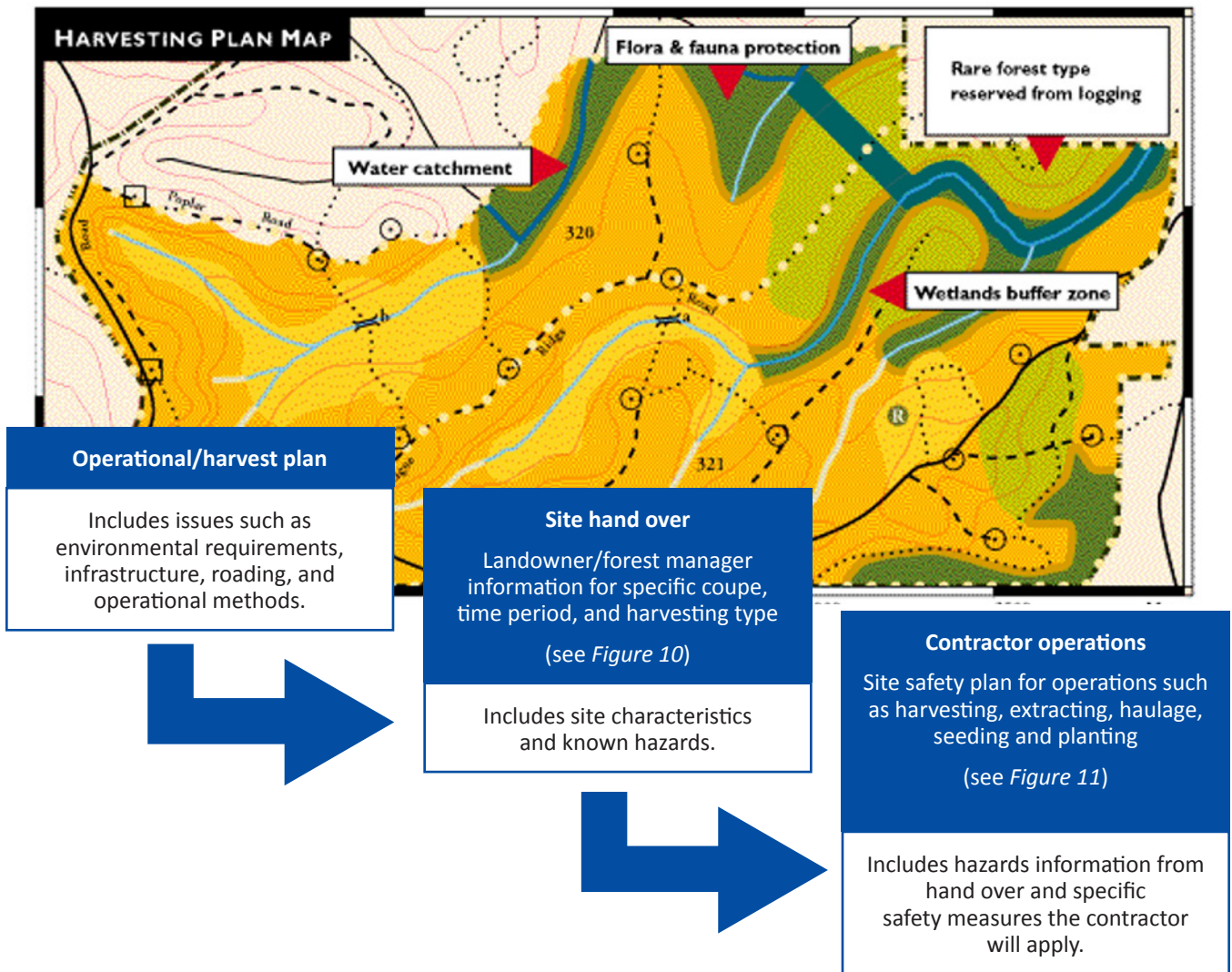


Figure 10 shows a sample of site hand over information. It gives examples of the hazards and risks that a landowner or forest manager should account for before work starts. Critical hazards, common risks, and essential risk controls should be covered in the hand over information.

Figure 10: Template for site handover (worked example)

PROPERTY DESCRIPTION		EMERGENCY MEETING POINT (EMP)	
PROPERTY NAME:		JUNCTION:	
LOCATION:		LATITUDE:	LONGITUDE:
LATITUDE:	LONGITUDE:	MAP REFERENCE:	
COUNCIL/SHIRE:		RECEPTION LOCATION:	

DIRECTIONS TO EMP



SITE-SPECIFIC HAZARDS		
HAZARD 	ASSESSMENT AND CONTROLS 	RESPONSIBILITY/COORDINATION
Uneven and rocky ground	<ul style="list-style-type: none"> Assess the suitability of operations to the ground conditions. Incorporate this assessment into operational plans (e.g. for harvesting and extraction). 	Landowner or forest manager.
Steep slopes	<ul style="list-style-type: none"> Assess the suitability of operations to steep slopes, including identifying suitable methods to safely complete the work (e.g. winch-assisted extraction). Incorporate this assessment into operational plans (e.g. for harvesting and extraction). 	Landowner or forest manager.
Overhead power lines	<ul style="list-style-type: none"> Ensure operators are aware of the location of power lines, as identified by landowner or forest manager. Also ensure operations stay clear of these power lines and/or take place within defined safe zones. 	<ul style="list-style-type: none"> Forest manager to identify and inform contractors. All to observe safety procedures.
Hazardous trees	<ul style="list-style-type: none"> Provide the location of known hazardous trees to operators before work starts. Identify these locations on coupe maps. 	<ul style="list-style-type: none"> Forest manager to identify hazardous trees and inform contractors. Contractors to incorporate in site safety plan.
Underground utilities	<ul style="list-style-type: none"> Ensure operators are aware of the location of utilities, as identified by landowner or forest manager and ensure operations do not impact on utilities. 	<ul style="list-style-type: none"> Forest manager to identify utilities and inform contractors. Contractors to incorporate in site safety plan.
Boundaries of neighbouring properties	<ul style="list-style-type: none"> Ensure operators are aware of the location of boundaries and suitable separation distances are maintained. Use signage to advise of operations. 	<ul style="list-style-type: none"> Forest manager to identify and inform contractors. All to observe safety procedures.
Access points, tracks, roads, and bridges	<ul style="list-style-type: none"> Ensure operators are aware of the location of access points to the coupe and any roads and bridges within the coupe. Use suitable signage and access control. 	<ul style="list-style-type: none"> Forest manager to identify and inform contractors. All to observe safety procedures.



Figure 11 shows a sample site safety plan for a contractor. It incorporates contractor-specific issues as well as the information provided by the landowner or forest manager.

Critical hazards, common risks, and essential risk controls should be addressed in the SSP.

Figure 11: Template for a contractor site safety plan (worked example)

PROPERTY DESCRIPTION		EMERGENCY MEETING POINT (EMP)	
PROPERTY NAME:		JUNCTION:	
LOCATION:		LATITUDE:	LONGITUDE:
LATITUDE:	LONGITUDE:	MAP REFERENCE:	
COUNCIL/SHIRE:		RECEPTION LOCATION:	

DIRECTIONS TO EMP

SITE-SPECIFIC HAZARDS		
HAZARD 	ASSESSMENT AND CONTROLS 	RESPONSIBILITY/COORDINATION
Hazardous trees	<ul style="list-style-type: none"> Risk assess the removal of hazardous trees and manage these operations with safe work procedures. Manage operations near hazardous trees with separation distances and signage to protect ground workers. 	Contractor to include information from forest manager in site safety plan (SSP) and coordinate with other contractors on site.
Overhead power lines	<ul style="list-style-type: none"> Only work near power lines after a risk assessment. Follow network regulators' 'No Go Zone' requirements and specific operation safe work procedures. 	Contractor to include information from forest manager in SSP and apply safe work procedures.
Log measuring and marking	<ul style="list-style-type: none"> Risk assess traffic flow in work area, separation distances between operations, and the communication system. Manage work patterns and traffic flows, establish exclusion zones and safe work areas, and maintain radio communication between ground workers and machine operators. 	Contractor to include in SSP and coordinate with other contractors on site.
Falling timber and other debris and objects during seed collecting	<ul style="list-style-type: none"> Risk assess the scheduling of seed collection relating to other operations and the separation distances between operations. Establish exclusion zones and safe work areas, maintain oral and visual communication with other workers, and establish and maintain relevant warning signage. 	Contractor to include in SSP and coordinate with other contractors on site.
Slips and trips on debris from previous tree crops or uneven terrain	<ul style="list-style-type: none"> Risk assess ground conditions following particular harvesting methods, site preparation and debris from previous rotation (e.g. windrowing or mechanical cultivation). Consider the type and size of planting stock. Review site for hazards before work starts, use a machine to carry stock to the planting site and use safety footwear. 	Contractor to include in SSP and apply safe work procedures.
Hazardous trees near proposed road	<ul style="list-style-type: none"> Assess nature of trees and distance to road. Remove hazardous trees within 2 tree lengths of proposed road using safe method. 	Contractor to include in SSP and coordinate with other contractors on site.

6 RISK MANAGEMENT ESSENTIALS FOR ALL FORESTRY OPERATIONS

Section 4 outlines the basics of risk management. In this section, the essential elements of risk managements across all forestry operations are defined. Regardless of type of operation – be it harvesting, extraction, weed control, planting or another activity – there is a baseline risk profile for all forest workers.

6.1 Critical hazards, common risks, and essential controls

Landowners, forest managers, and contractors have responsibilities to manage risk at various stages in the planning and production cycle. However, a baseline of hazards, risk factors, and risk controls applies to all aspects of forestry operations. These are listed below.

- The **critical hazards** are based on injury and incident data as well as the knowledge and experience of forest operators. They have the most potential to cause death or injury.
- The **common risk factors** are likely to explain the nature of the risk and influence the likelihood and potential harm of the critical hazards.
- The **essential risk controls** are the general categories of measures that will individually, or in combination, eliminate or minimise risks so far as is reasonably practicable.

These risk management essentials are the baseline in all the guidance on specific forest operations in sections 7 to 13.



Hazardous trees and falling objects (e.g. limbs, dry stags, dead and brittle tops, hollow trees, and **widow makers**)



Sloping, rough, uneven, and unstable terrain



Rolling logs, sliding logs, or materials under tension



Breach of exclusion zones and separation distances by ground workers, mobile plant, or falling trees or objects



Objects ejected or released from machinery (e.g. chain shot)



Proposed pattern of work (e.g. felling and extraction method) or **layout of cultivation lines for site preparation**



Steepness of slope, length of slope, soil condition, debris, stumps, and holes



Location of workers and other operations



Current and forecast weather conditions affecting ground conditions, visibility, and worker fatigue



Effectiveness and reliability of communication systems



Safe work practices achieved through relevant training and competencies, licences, PPE, and readiness for work policies (see *Section 6.2.3*)



Equipment designed for the task and operated within specifications (see *Section 6.2.1*)



Exclusion zones and safe work areas to separate workers from operational and forest hazards; physical barriers, distance, or time-based means of separation (see *Section 6.2.3*)



Communication systems for site access, such as signage, for communication between operators in machines and on the ground, and for emergency and evacuation situations (see *Section 6.2.4*)

Each health and safety management system and site safety plan should refer to these risk management essentials. They should also be communicated throughout the production cycle.

Each section on forestry operations (e.g. harvesting, extraction, or planting) outlines activity-specific hazards and risk factors. Risk controls are also customised to the operations and circumstances (e.g. type of competency, separation distances, type of equipment, and work method).

These additional hazards, risks and controls are indicated by the following icons:



Activity-specific hazards



Activity-specific risk factors



Activity-specific risk controls

6.2 Essential risk controls

6.2.1 Equipment designed for the task and operated within specifications



Equipment and tools should be selected with the help of designers, manufacturers, and suppliers. They all have duties to provide plant that is fit for purpose and designed to operate safely.

The purchaser should describe the intended use, operating conditions, and likely site hazards to the supplier. In turn, the supplier should determine suitable equipment for the purchaser to consider.

Common design and operational issues include:

- protective devices and structures to keep operators safe (see *Section 15.1 Protective structures for forestry machines*)
- cabin protection (e.g. reinforced glazing to protect the operator from chain shot)
- compliance with Australian or overseas design standards, including for any attachments for plant or tools
- compatibility of attachments
- suitability for the intended terrain and use
- ergonomic features (e.g. working posture, cabin visibility, noise, and vibration)
- cabin access that minimises the risk of falls when the operator is entering and exiting
- guarding of hazardous machinery components.

Machine operators should hold a **statement of attainment** in relevant **units of competency** (see *Section 15.4*). They must be trained in the working limits of the machinery and in techniques for different tasks and ground conditions.

6.2.2 Exclusion zones and safe work areas



In forestry operations, a failure to separate activities that create risks to others can result in death or serious injury. Risks arise in situations such as:

- ▲ workers being impacted by adjacent operations
- ▲ workers being impacted by machinery on a log landing
- ▲ truck drivers being impacted by log loading.

An **exclusion zone** is a designated area that everyone but the operator is excluded from. Uncontrolled or unplanned entry into the exclusion zone puts each party at risk. On some sites, an exclusion zone is used to separate everyone, including the operator, from hazardous trees or from power lines.

An exclusion zone can be established by:

- defining a **separation distance** – the common separation distance is two lengths of any tree being fallen or snigged
- creating a **physical barrier** – for example, a non-operational machine might be parked between ground workers and other working machines
- scheduling activities at **different times** – risks are reduced by scheduling different parts of the process at different times. For example, a log landing is constructed before other activities start.

An exclusion zone can only be entered when the person is called in by the zone ‘owner’. This involves visual recognition and radio communication or other signalling. The activity must stop before the person enters the zone. It can be restarted by radio communication or other signalling.

A **safe work area** is a designated area outside another operator’s exclusion zone. Examples include an area on a log landing for maintenance, for the log truck driver during loading, or for log measuring. The same methods of distance, physical barrier, and time are used to define safe work areas.

In the case of separation distances, the common measure is two tree lengths. This may not always be practicable, particularly on landing sites with limited space or where equipment features such as boom size and arc are more relevant. In these situations, a risk assessment should be done to establish an agreed and documented plan that achieves the highest level of protection that is reasonably practicable.

Such plans should demonstrate safety is maximised as follows:

- Work occurs under protective structures where possible, and workers use radio protocols when leaving that protection.
- Reliable radio communications to enable people outside a canopy to advise where they are and when they have moved to a different location.
- A relevant safety factor is used for equipment, such as twice the boom length or boom arc.
- Suitable signage and traffic control is in place.
- Anyone who must follow the plan has been consulted and given it their sign-off.

6.2.3 Safe work practices



Safe work practices are achieved through relevant training and competencies, licences, **PPE**, and readiness for work policies.

The person conducting a business or undertaking (PCBU) must ensure workers who perform hazardous work in forestry operations have the relevant competencies to carry out their job safely.

All workers are expected to hold a **statement of attainment** for a unit of competency or equivalent that provides a general understanding of health and safety in their workplace so they are aware of the general hazards of forestry operations.

All workers should hold a statement of attainment for a relevant unit of competency when undertaking any potentially hazardous activity. In forestry, hazardous activities include tasks that involve:

- using handheld motorised plant (e.g. chainsaw)
- operating heavy machinery (e.g. feller buncher)
- driving log trucks.

Section 15.4 sets out the units of competency that describe relevant performance standards for workers in potentially hazardous forestry operations. These are minimum standards and recognise pre-existing qualifications that are supplemented by relevant experience.

Competency to conduct hazardous activities is best demonstrated or verified through formal assessment by a registered training organisation. If workers do not hold a statement of attainment, they should demonstrate equivalent competency. Where access to training for specific competencies is limited or the worker has just started, there should be evidence to demonstrate in-house training and progress towards becoming competent against the relevant performance standard.

A worker can gain equivalent demonstrated competency through on-the-job training. For machinery-related competencies,

equipment suppliers can provide initial training that is supported with close supervision until the competency is formally assessed. The PCBU should have a process to evaluate the worker's competency. The process should provide detailed documented evidence that shows the development of skills or behaviours relevant to the activity the worker is employed for.

Any workers without the required minimum qualifications should be regarded as 'under training', and receive a suitable level of supervision, identified by a **competent person**.

New workers should be enrolled in relevant accredited training within six months of starting. Their training should be completed within two years. Existing workers should have their current competency reviewed periodically to ensure they are aware of the risks related to new equipment, methods, and technology.

Records of training, statements of attainment, and any related licences should be kept.

The WHS Regulations require a PCBU to provide PPE where it has been established other risk controls are not reasonably practicable.

PPE provided to workers must:

- minimise risk to health and safety
- be suitable for the work and the hazards associated with the work
- be a suitable size and fit, and reasonably comfortable, for the worker who will use it.

Even though equipment can provide protection, PPE should be worn by all forestry workers as all tasks involve some exposure to common hazards. PPE should be used with other methods of reducing risk, rather than being the only level of protection.

The required PPE by activity is summarised in *Section 15.2* and may include:

- high-visibility clothing
- a safety helmet
- safety footwear
- hearing protection
- eye protection
- safety gloves
- leg protection
- respiratory protection.

Information must be provided to workers on the proper use, storage, and maintenance of PPE.

WHS Regulations also require that workers (and others such as visitors) wear provided PPE in line with instructions and training. In addition, workers have a duty to not damage or misuse PPE. If they are aware of damage or ineffectiveness, they must report it to the PCBU. The PPE must then be replaced if damaged or ineffective.

For more information on PPE standards and the types of PPE for forestry operations, refer to *Section 15.2*.

6.2.4 Communication systems



Communication is essential to managing risk in any forest operation. In particular, methods need to cover controlling site access, communicating between operators in machines and on the ground, and managing emergencies and evacuations.

Systems include:

- suitable signage to control traffic on access roads and to mark any harvesting operations that could present a risk to others
- ultra-high frequency (UHF) radio system for access, on site, and emergencies
- a radio protocol that is documented and understood by all workers
- emergency contact numbers
- radio communications to monitor movement onto and within log landings
- protocols to manage entry into a designated work areas and, where necessary, exclusion zones.

The following checklist assesses whether current systems have these basic requirements in place. The checklist may be useful for forest managers, site supervisors and contract managers.

FIFWA Forestry Safety Code

Essential risk controls checklist		Yes	No	N/A
1.	Formal training			
1.1	Do workers have statements of attainment for units of competency relevant to the job?			
1.2	Do all workers and contractors have required licences?			
1.3	Are records of statements of attainment and licences kept on file?			
2.	On-the-job training			
2.1	Are workers who are yet to gain skill or equipment competency under the close supervision of a person with relevant competency and experience?			
2.2	Are workers 'in training' assessed against the performance criteria in the competency they are seeking to attain?			
2.3	Are there checks on progress and records kept of skill and experience achievements?			
3.	PPE and first aid			
3.1	Has training been provided on the use and serviceability of PPE?			
3.2	Has appropriate and serviceable PPE been provided for particular activities?			
3.3	Has training been provided on first aid and emergency procedures?			
4.	Selection and use of plant and equipment			
4.1	Is machinery suitable for the terrain and intended use?			
4.2	Has training been provided on the use and maintenance of plant and equipment?			
4.3	Can selected machinery operate within the manufacturer's specifications on the site?			
4.4	Are operator protective devices and structures fitted to mobile plant? Are they suitable for the work?			
4.5	Have manufacturers supplied information on ergonomic features (e.g. working posture, cabin visibility, noise, and vibration) of mobile plant?			
4.6	Have chainsaws and cutting heads been serviced in line with specifications?			
4.7	Has plant and equipment been regularly serviced and maintained?			
5.	Exclusion zones and safe work areas			
5.1	Does the site safety plan indicate exclusion zones around identified hazards (e.g. power lines and hazardous trees)?			
5.2	Has everyone on site been informed of separation distances (e.g. two tree lengths)?			
5.3	What form of barrier is used to create an exclusion zone (e.g. two tree lengths, physical barrier, time separation by scheduling)?			
5.4	Do truck drivers know where the safe work area is during loading and unloading?			
5.5	Are there methods to separate activities on log landings?			
5.6	Are there communication protocols for the zone owner to call others into an exclusion zone (e.g. radio and visual signalling)?			
5.7	Is a risk assessment done when two tree lengths is not practicable to separate activities?			
6.	Communications			
6.1	Is appropriate traffic control signage displayed?			
6.2	Is there appropriate signage warning of operations (e.g. tree felling) in the vicinity?			
6.3	Has everyone been informed of the oral, visual, or radio communication used on site to coordinate activities and ensure exclusion zones are maintained?			
6.4	Are UHF radio frequencies operational and channels displayed on signage?			
6.5	Are emergency contact numbers displayed and communicated to all?			
6.6	Can isolated workers maintain effective communication?			

6.3 Supports for risk management essentials

To establish risk management essentials, several supporting elements and processes are required. These should be outlined in the health and safety management system and relevant site safety plans. For example, training underpins operator competencies, induction supports safe work practices, and information provision enables hazard identification.

6.3.1 Training

Providing training is a core duty of all PCBUs as set out in *Section 2*. This responsibility includes:

- selecting workers with relevant competencies for forestry work (see *Section 15.4*)
- providing training to nationally endorsed standards with training and assessment conducted by a registered training organisation
- providing induction training to new workers on and off the job
- providing training in company-specific policies and procedures
- keeping records of training, competencies, and licences.

6.3.2 Induction

Induction is necessary for new workers and should cover:

- hazards they are likely to face
- contractor and forest manager workplace health and safety policies (e.g. drug and alcohol policy)
- safe work procedures
- PPE requirements
- emergency procedures
- incident reporting
- first aid and amenities
- communication protocols
- disciplinary procedures
- consultation and issue resolution.
- All workers are to be inducted before entering a new operation to ensure they are aware of the matters covered in the SSP.

Inductions should be refreshed when any of these matters change.

6.3.3 Information provision

All duty holders must provide information to other parties as part of their responsibilities as shown in *Section 2*. A harvesting contractor, for example, should provide information on hazards and safe work procedures to both directly employed workers and subcontractors. This information should include:

- information required by regulation (e.g. safety data sheets for chemicals)
- risk controls for common workplace hazards (e.g. extreme weather, noise)
- site hazards
- safe work procedures for the work
- hazard and incident reporting
- emergency procedures
- first aid and amenities
- drug and alcohol policies
- communication protocols.

This information mirrors induction topics and should be provided both to new workers and to all workers when work begins at a site.

Information can be in a written or electronic form if it is accessible and uses language that users can understand. Involving all crew members in developing information is the best way of guaranteeing they will understand and follow the business requirements.

6.3.4 Supervision

The PCBU with direct control of the work must supervise the work and maintain a safe and healthy work environment. Forestry operations are often difficult to directly observe and supervise, so supervision is highly dependent on consultation with and cooperation from crew members.

Some typical circumstances that monitoring and supervision may identify include:

- conflict between crew members that compromises safety
- inspection of stumps indicating a manual **feller** has poor technique, which creates risks for the feller and others
- a machine operator using a machine beyond limits.

In these cases, strategies such as counselling, refresher training, disciplinary procedures, or independent auditing may be used to resolve problems.

Compliance with safety policies and procedures will be highest where there is:

- clear understanding of the procedure and its role in achieving safety
- opportunity to discuss and problem-solve issues that affect compliance
- understanding of the impact of poor practices on oneself and others
- acceptance of the legal duty to follow safety procedures and the role of agreed disciplinary procedures.

Regular crew meetings are a way of ensuring matters do not escalate and changes can be made to improve safety outcomes.

6.3.5 First aid

First aid requirements for forestry operations are set out in the WHS Regulations.

The WHS Regulations outline the matters that must be considered to establish first aid arrangements. These matters are:

- the nature of the work being carried out at the workplace
- the nature of the hazards at the workplace
- the size, location, and nature of the workplace
- the number and composition of the workers at the workplace.

An operational coupe should have at least one trained first aider to provide ongoing coverage.

Specific requirements for workplaces should be guided by a risk assessment as set out in the Safe Work Australia approved Code of Practice *First aid in the workplace*.

Section 15.3 First aid kits, which is reproduced from the approved code, outlines the typical contents for first aid kits, including additional items for remote workplaces.

6.3.6 Amenities

Amenity requirements for forestry operations are set out in the WHS Regulations. Specific guidance is provided in the Work Health and Safety Commission's code of practice *Managing the work environment and facilities*.

The same matters as for first aid must be considered in assessing amenities. Consequently, amenities may vary but as a minimum should include:

- clean drinking water
- a hand-washing facility
- suitable sanitation arrangements
- shelter from conditions.

Facilities should be in a safe work area away from identified hazards.

6.3.7 Emergency planning

The WHS Regulations set out the responsibility to prepare, implement, and maintain an emergency plan. The nature of this plan depends on assessing the same factors as in *Section 6.3.5* and *Section 6.3.6* (e.g. nature of work, hazards, location, and number of workers).

Some typical emergency situations based on these factors include:

- treatment and evacuation of injured worker(s)
- motor vehicle and machinery incidents
- chemical spill
- search and rescue
- unauthorised persons entering a work site
- fire.

Each emergency plan will vary but should include as a minimum:

- an emergency meeting point, which is communicated to all
- emergency contact numbers
- set up and testing of communications systems
- first aid that is adequate for possible scenarios
- protocols for working alone, 'no response', and 'no return'
- adequate transport for evacuation if required.

The emergency plan should form part of the SSP. Its information must be made available to all at the workplace and the site induction should run through its procedures. Each emergency plan should be reviewed and tested.

6.3.8 Documentation

Effective management of health and safety will always require some documentation to meet legislative requirements. These records demonstrate to others that safe work procedures are being followed and they support effective induction and training.

Section 4.8 outlines the reasons for keeping basic records for risk management, and these reasons apply to all documentation.

In the WHS Act and Regulations, the record-keeping requirements that apply most to forestry operations include:

- Act s38 – Duty to notify of notifiable incidents
- Regulations s43 – Duty to prepare, maintain and implement emergency plan
- Regulations s50 – Monitoring airborne contaminant levels
- Regulations s58 – Audiometric testing.

While these are explicit and mandatory requirements, many other parts of the legislation imply records must be kept to show compliance. Records relating to equipment maintenance, training, health monitoring, safe work procedures, and risk assessments are just a few examples. The business's risk management system will generate this documentation.

Documented policies, plans, and procedures in health and safety management systems and site safety plans should be up to date. They should also be reviewed when things change (e.g. contractual requirements, legislation, methods, and equipment) and amended accordingly.

6.3.9 Incident reporting

Part 3 of the WHS Act requires the PCBU to notify WorkSafe Western Australia if at a workplace there is:

- a death
- someone suffers a serious injury or illness
- a dangerous incident.

See WorkSafe Western Australia's interpretive guideline *Incident notification*.



Examples of serious injuries and illness include:

- amputation of any part of the body
- a serious head injury
- a serious eye injury
- serious lacerations
- medical treatment within 48 hours of exposure to a substance.

Examples of dangerous incidents include:

- an uncontrolled escape of a pressurised substance
- electric shock
- the fall or release from a height of any plant, substance, or things like a branch or tree that created an immediate serious risk to health and safety.

For any notifiable incident, the site must be preserved until an inspector attends or directs otherwise. The PCBU must keep a record of each notifiable incident for at least five years from the day notice of the incident is given to the regulator.

Apart from statutory reporting requirements, businesses should have an internal process for reporting and investigating non-reportable incidents (e.g. hazard reports, lost time, medical treatment, or near misses).

As with a notifiable incident, all reported incidents should be subject to risk assessment and review. This helps determine future action to mitigate the risk of recurrence.

From a risk management point of view, the reasons for investigating incidents are to:

- prevent similar incidents recurring in the future
- identify any new hazards
- identify and choose suitable controls or strategies and update relevant procedures.

If the results of any investigation show that changes need to be made, corrective action must be taken. The risk management process outlined in the Code should be the basis for identifying the best solutions.