

FORESTRY: GUIDE TO MANAGING RISKS OF LOG EXTRACTION

This Guide includes information on the potential hazards extracting logs and practical examples of ways you can control the risks associated with them. It is part of a series of forestry industry material and should be read and used together with the *General guide for managing risks in forestry operations* and specific guidance material for:

- [growing and managing forests](#)
- [cable logging](#)
- [coupe and harvesting site access and preparation](#)
- [timber harvesting](#)
- [log landings](#)
- [loading, transporting and unloading logs](#)
- [infield processing of forest products](#)
- [plant and equipment for forestry operations](#), and
- [general hazards in forestry operations](#).

These guides are available on the Safe Work Australia website.



Log extraction

Log extraction includes forwarding, skidding, snigging and shovel logging. Each activity has exposure to the common hazards of falling objects, roll-over of mobile plant and working too close to other operators. Each method of log extraction has specific hazards but the following hazards, risks and control measures are common to all extraction methods.

High risk forestry activity

Log extraction

Table 1 Common hazards and risks associated with log extraction

Hazards and risks
<ul style="list-style-type: none">■ being struck by:<ul style="list-style-type: none">■ rope wire sprags■ rolling logs or debris escaping from the landing chute in cable logging■ falling objects e.g. limbs, dry stags, dead and brittle tops and widow makers that fall as a result of harvesting or extraction activity■ equipment failure■ objects penetrating the cabin■ instability of machinery and risk of rolling over or sliding■ machinery hitting other machinery or people in the work area, and■ slips, strains and falls when getting in and out of machinery.

Table 2 Control measures for log extraction

Control measures
<ul style="list-style-type: none"> ■ using machinery: <ul style="list-style-type: none"> ■ suitable for the task and terrain ■ with a grapple ■ with an operator protective structure ■ with handrails and steps in suitable places ■ operating: <ul style="list-style-type: none"> ■ within a safe work area e.g. separated by two tree lengths ■ machinery in accordance with manufacturer’s specifications ■ ensuring: <ul style="list-style-type: none"> ■ logs are approached and choked from the high side ■ extraction tracks are clear and suitably located ■ the operator is trained in snigging techniques and the machine’s working limits ■ oral, visual or radio communication is maintained with other forest workers, and ■ personal protective equipment (PPE) is suitable and maintained correctly e.g. high visibility clothing, safety footwear, hearing protection, safety helmet when outside cabin and gloves when handling fuels or cables.

High risk forestry activity

Extracting logs on steep ground

Table 3 Control measures and processes for log extraction on steep ground

Control measures
<p>1. Select suitable machines.</p> <ul style="list-style-type: none"> ■ The machine should be assessed to ensure it is suitable for the terrain, slope, weather, log size and task before work starts. ■ The machine must be fitted with a protective structure designed to protect the operator if the machine rolls over and from falling objects, for example a falling object protective structure (FOPS) suitable for the identified hazards and roll over protective structure (ROPS) suitable for the slope and terrain. ■ Where fitted, seat belts must be worn. ■ The machine should be operated according to the manufacturer’s specifications.
<p>2. Maintain standard precautions.</p> <ul style="list-style-type: none"> ■ Inspect the machine before starting the operation. ■ Assess the coupe or harvesting site for rock, slope and other ground related hazards before starting the operation. ■ Maintain safe work areas and procedures. Entry into another work area should only occur with permission of the other operator. ■ Maintain visual, oral or radio communication with other workers. ■ Check for overhead hazards before getting off machinery. ■ The machine operator should wear safety footwear and high visibility clothing at all times and a safety helmet when outside the cabin. ■ Ensure noise levels are checked and hearing protection is worn as necessary. ■ Ensure there are no loose objects inside the cabin of the machine.

Control measures

3. Prevent instability or rollover on steep or uneven ground.

Forwarders

- The loader or carrier should never be loaded over the manufacturer's specifications or loaded above the level of the headboard or stanchions.
- Stanchions should not be extended without the manufacturer's authorisation.
- Drag logs closer to the forwarder before lifting.
- Load the topside of the cart or truck first.
- Do not overload the grapple.
- Do not overload the log bunk.
- When loading on sloping ground, park straight up or down the slope.
- Logs being loaded in the loader should be fully encircled by the holding jaws when the jaws are closed.

Snigging with skidder or dozer with winch or grapple

- Logs should not be extracted on gradients or side slopes greater than those specified by the equipment designer, manufacturer, importer or supplier.
- When snigging heavy logs downhill, hook up 'short' and low to the ground to avoid logs overtaking the skidder or dozer.
- When snigging heavy logs uphill, raise the log and, if necessary, use a series of 'winch—move forward—winch again' moves.
- Avoid turning the machine on a slope.
- Avoid travelling across side slopes in excess of manufacturers specifications.

Using winch

- When travelling downhill, keep the winch rope taut so the snig does not bump or pass the rear of the machine.
- Avoid winching logs at a sharp angle to minimise the risk of rolling over.

Shovel logging

- When working on a slope, keep the grab as low as possible.
- When travelling downhill, keep the boom facing downhill.
- When travelling uphill, keep the boom facing uphill and fully extended with the grab as low as possible.
- Do not shovel logs towards or onto a live landing.
- Test loads before extending the boom to ensure the machine remains stable during load movement.
- Avoid turning the machine tracks on a slope.
- Avoid travelling across side slopes without using a side cut track.
- If travelling across side slopes is unavoidable, keep the boom facing downhill.
- Where practical, always work on slopes with the tracks in the direction of the slope.
- If the machine starts to tip or slide, lower the boom immediately in a controlled way.



De-limbing

Preparing logs for extraction creates many extra hazards over and above common hazards like falling objects, contact with mobile plant and kickback from chainsaws.

Table 4 Control measures for de-limbing

Control measures
<ul style="list-style-type: none">■ De-limbing and crosscutting should be done at least two tree lengths away from felling operations or be done at separate times.■ Trees should be de-limbed mechanically if possible as the first option.■ Trees should be assessed for risk of rolling, dropping or swinging when cut.■ Workers should approach branches with caution and examine the branch to assess if it is under tension before choosing a work method.■ De-limbing or cross cutting should not be carried out from the downhill side of the log if the log has the potential to roll.■ Overhung or suspended logs should only be cut using recommended methods e.g. AS 2727-1997: <i>Chainsaws – Guide to safe working practices</i>.■ Logs suspended above shoulder height should not be crosscut.■ In steep or uneven terrain, the crosscutter should not work immediately above or below other operations or people.■ Watch for trapped or springy saplings.■ Avoid standing on the log wherever possible when de-limbing or cross cutting.



Further information

Codes of practice, guidance material and other resources are on the [Safe Work Australia](http://www.swa.gov.au) website (www.swa.gov.au).