

Forestry Contracting Businesses: Bushfire Salvage Operational Costs

Introduction

Forestry Contracting Businesses are often required to undertake a range of fire salvage (burnt timber) operations nationally following a bushfire event. AFCA has undertaken an assessment of the impacts on contracting businesses operating within fire salvage operations and the increased costs associated with these in comparison to normal harvesting conditions. The assessment is based on three areas associated to harvest and hauling activities of fire salvage timber:

- Harvesting
- Loading
- Hauling

The information has been informed by data provided on fire salvage operations over an extended period of around eight months or more under differing conditions. Therefore, could be considered the average or 'generally expected' costs over the life of a fire salvage operation.

General Fire Salvage Impacts

The increased costs associated fire salvage for forestry contracting businesses can be attributed to the following key contributions across the three areas:

- More frequent scheduled maintenance
- Increase in consumables ie. filters, saw bars, chains, filters,
- More frequent cleaning
- Productivity reduction due to increased waste and moisture/weight loss over time
- Efficiency losses associated with capacity in network to manage increased wood flow and increased pressure on supply chain

Based on recent data there is an increase cost of 8% on the general wear and tear across all variable costs including safety and regular changing of operators PPE.

Additional consideration is that many forestry contracting businesses relocate their employees to areas were this is significant demand for quick salvage of timber, and these create additional costs to the business.

Overall, there is a **25% – 30% increase in costs** for forestry contracting businesses resulting from fire salvage operations than normal operating conditions.

Harvesting

Carbon on burnt trees has an adverse impact on harvesting equipment which have been found to result in increased:

- Chain and bar maintenance
- Chain cost by 4%
- Bar cost by 3%
- Frequency of roller maintenance and knife sharpening
- Filter replacement
- Equipment wash downs
- Servicing costs and down time on the harvesters 15%

Forestry Contracting Businesses have also reported that the lifetime service hours of equipment are impacted with earlier renewal of equipment than that which has not operated in fire salvage.

Loading

There are domestic markets that accepts a % of burnt timber but a significant amount of burnt timber is exported. The common lengths for export are 3.9 m and 5.9 m.

These combinations of lengths must be carefully considered when loaded on trucking configurations to meet Static Rollover Threshold (SRT) and ensure maximum safe volumes are loaded. This becomes increasingly important as timber becomes lighter in weight over the duration of fire salvage operations.

The loading and unloading times are generally increased by 25%. Which is compounded by queuing at destinations for unloading and ensuring loads are constructed well and restrained correctly.

A major regulating restriction is the permits (road classes) which often affect the loading times on loading multi combination trucking fleets. These fleets are required to move large volumes of burnt wood over a restricted time periods before the wood quality deteriorates.

Haulage

Haulage is affected adversely as the main objective is to deliver maximum pay loads compliant with all regulations safely to the customer. Haulage rates under normal haulage conditions are based on maximum pay loads being achieved consistently with minimal distribution in the chain for loading, unloading, and queuing. In addition, trucking configurations are restricted by road class permits which directly relate to length combinations to ensure maximum safe payloads.

Burnt Timber Salvage operations are affected adversely by the timber drying out which makes it improbable to meet maximum payloads complying with SRT. Given haulage is generally paid at a \$/tonne, a % should be applied to the base rates for haulage to reflect weight loss over time for burnt timber salvage campaigns in addition to other related costs not already built into the rate. Of note, generally export markets are costed by a scaled method (JAS), which is not affected by weight loss and are therefore not impacted by the burnt timber weight loss over time.

In addition to the consideration of timber weight loss over time other additional cost increases include:

- Changing dynamics of truck utilisation, ie. travel distances, fatigue, wear, and tear
- Cleaning of equipment
- Loss of total daily tonnes carted due to queuing at unloading (reports of over 2 hours waiting to unload) limiting number of loads.

% Scale Weight Loss Table

A successful methodology for rates to overcome the timber weight loss over time is a % scale. As an example, the below table reflects a rate considering a 10%, 20% 30% timber weight loss over time for a fire salvage operation.

This table also quantifies the variation in non-merchantable product (waste) that can be left in the cutover due to grade specifications specific to fire salvage market eg. more restrictive length or diameter specifications compared to harvesting green wood.

Table: Timber Weight Loss Tonne Rate

	@ 1.0m cube = 1.0 tonne		10% weight loss		20% weight loss		30% weight loss	
	t/wk	\$/t	t/wk	\$/t	t/wk	\$/t	t/wk	\$/t
Total Cost of Salvage								
High- waste 20% plus of production	1,600	22.44	1,440	24.94	1280	28.06	1120	32.06
Medium-waste 10% to 20% of production	1,800	19.95	1,620	22.17	1440	24.94	1260	28.50
Low- waste less than 10% of production	2,000	17.95	1,800	19.95	1600	22.44	1400	25.65