

A Short Review of Cable Yarding Applications in Australia

Mohammad Reza Ghaffariyan 

Australian Forest Operations Alliance (AFORA), Forest Industries Research Centre, University of the Sunshine Coast, Maroochydore DC, Queensland, Australia

Abstract

The current technology in Australia is mainly large swing tower yarder with grapple. These yarders operate under whole tree or cut-to-length methods in steep terrains of Victoria, Tasmania and South-East Queensland. Cable yarding is often applied in clear fell operations in pine or Eucalypt stands in Australia. Felling operations prior to yarding are carried out manually or using tracked feller-bunchers. Typical terrains for applying cable yarding have slope larger than 30°. There is currently a lack of small to medium size cable yarders that can efficiently operate under different circumstances. Medium size capacity yarders would be required to handle a wide range of situations under uphill and downhill extractions while small capacity highly mobile yarders will be needed for clean-up operations.

Keywords: Cable yarding, Yarders, Timber harvesting, Productivity, Steep terrains

1. Introduction

Cable-based yarding technology has had a long tradition in Central Europe (Cavalli et al., 2004), the Pacific Northwest Region of the United States and Canada, Japan (Heinimann et al., 2001) and Turkey (Acar and Yoshimura, 1997; Eroglu et al., 2009). During the 1960s, European sledge yarder technology became well known, and in the 1970s, mobile tower yarders began to replace them (Heinimann et al., 2001). Tower yarders are common cable yarding systems in mountainous forests in Europe (Acar and Yoshimura, 1997; Ghaffariyan et al., 2009; Spinelli et al., 2015). Planning for cable yarding systems takes more time than for ground-based systems. Once in place, however, the production rate on steep slopes is comparable to ground-based systems. Most operations using cable yarders are feasible when operating in a high-product-yield stand and when factors affecting production have been carefully evaluated. Cable yarding also has the advantage of minimizing the impact on environmentally sensitive areas, especially when complying with best management practices (BMP) and other forest practice regulations (Huyler and LeDoux, 1997).

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under whole tree or cut-to-length methods in steep terrains of Victoria (Figure 1), Tasmania (Figure 2) and South-East Queensland. According to Parschau (2012) although cable yarding is currently not practiced in the native state forests of New South Wales, cable harvesting has a relatively long history in Australia, spanning from the first steam-driven, skid-mounted systems introduced in the early 19th century to large tower yarders that have been used since the mid-20th century and are still an integral part of managing the country's plantation estate on steeper slopes. However, the conventional application has been mostly associated with clear-cutting operations. In Victoria and Tasmania, the cable yarders are still used for clear-cutting operations in native state forests managed under silvicultural regimes for light-craving tree species such as Australian mountain ash (*Eucalyptus regnans*). The association of cable yarding with clear-cutting native-forests, a highly controversial issue in Australia, may have contributed to a situation where the technology was not envisaged to play a future role in the management of the native forests of New South Wales by the time the current environmental protection License (EPL) was put in place (Forest Corporation NSW, 2010).

*Corresponding author: Tel: +61-7 5456 5447 E-mail: mghaffar@usc.edu.au

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