INTRODUCTION

The incidence of bushfires in Australia poses a significant threat to lives and property. Disastrous fires, such as the Ash Wednesday fires in 1983, Hobart fires of 1967 and the Canberra fires in 2003, are not totally random events. They exhibit spatial and temporal patterns of occurrence and resulting damage. Spatially variable factors such as slope, aspect, ignition patterns, fuel characteristics and fire weather all contribute to the overall threat posed by bushfire.

Fire management authorities aim to minimise this threat through a range of temporal patterns of occurrence and resulting damage. Spatially variable factors the Canberra fires in 2003, are not totally random events. They exhibit spatial and improvements in data quality and technology arise, risk related questions are only determine the spatial extent of the risk, but also quantify the risk, such that fire

RESULTS

Shields & Tolhurst (2003) introduced a contemporary integrated approach to bushfire management process. The method of practically implementing this approach using currently available data. A risk analysis, incorporating the dynamic effects of bushfires. This study develops a model for the greater Hobart area is provided using ignition, fire behaviour and fire propagation models along with climate, fuel, terrain, historical ignition and asset data in a Geographical Information System (GIS) environment.

BUSHFIRE RISK

Risk is defined as “the chance of something happening that will impact on objectives”. It is measured in terms of consequences and likelihood (Standards Association of Australia & Standards New Zealand, 2004). Applying this to bushfires, the likelihood component is the probability of a fire start (ignition) and spread (growth) and the consequence component is the impact of this fire starting and spreading.

Likelihood = Probability of Ignition X Probability of a fire spreading, becoming uncontrolled and reaching the urban interface

Consequence = Dwelling density

RESULTS

Probability of Ignition

Tasmania Fire Service incident data for the greater Hobart area was examined for the seven year period between 1 July 1998 and 30 June 2005. Since the vast majority of data was related to ignitions from human activity, human accessibility in the study area was investigated. An ignition model was produced and validated using historical data.

DISCUSSION

This study has effectively developed a method for the implementation of the bushfire risk framework introduced by Shields & Tolhurst (2003), using currently available data. A worked example using the greater Hobart area was used to show the effectiveness of the method for local to regional scale areas. The spatial extent and quantification of the bushfire risk in the Hobart area were successfully identified. Although further refinement to the method and improvements to the input datasets are necessary, this assessment may be used as a first pass estimation in the bushfire risk management process. This study has provided a template for future studies to be conducted and related many of the implementation issues involved with dynamic risk modelling.

REFERENCES