

# FIGHTING FIRES WHILE FIGHTING FATIGUE

## How do firefighters sleep during wildfire suppression?

Grace Vincent<sup>1,2</sup>, Brad Aisbett<sup>1,2</sup> and Sally Ferguson<sup>2,3</sup>

<sup>1</sup> Centre for Exercise and Sports Science, Deakin University, Burwood 3125 <sup>2</sup> Bushfire Co-Operative Research Centre, East Melbourne 3002, <sup>3</sup> Appleton Institute, CQUniversity, Adelaide, 5000

**Overview:** To curtail the spread of bushfire, Australia's firefighters often work long hours with little rest between consecutive shifts. However, there is no information on a firefighters sleep quantity and quality during multi-day wildfire suppression. Inadequate sleep increases the likelihood of impaired performance that can result in higher error and incident rates which in turn impact safety and efficiency.

**Aim:** To determine firefighters' sleep quantity and quality throughout multi-day campaign fires and planned burns.

**Preliminary results:** Ten firefighters wore activity monitors and completed sleep and work diaries for a period of four weeks during the 2012/13 wildfire season. Firefighters obtained less total sleep and reported increases in pre- and post-sleep fatigue levels during periods of wildfire suppression when compared to periods of no fire suppression.

**Implications:** A greater understanding of firefighters' sleep behaviour will assist in the management of fatigue-related risk through appropriate scheduling of work hours and sleep opportunities.

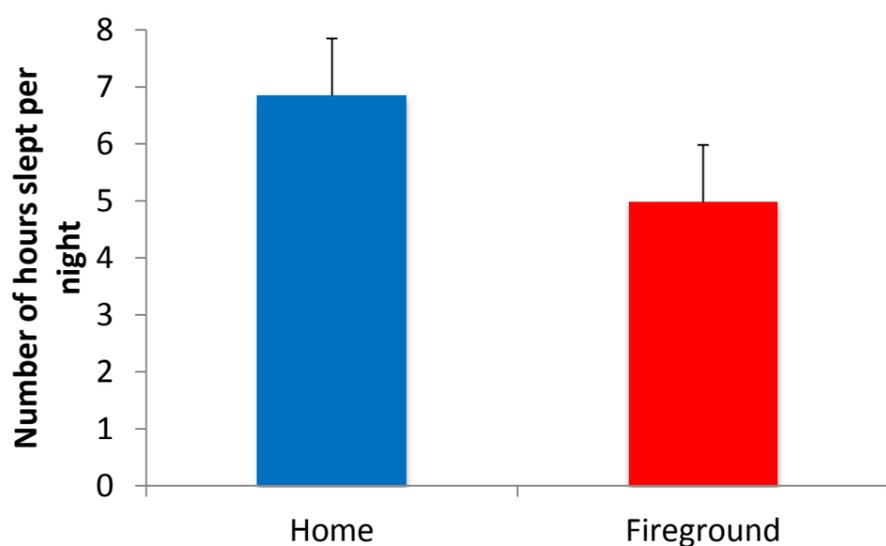


Figure 1: Number of sleep hours obtained per night during home conditions and wildfire suppression.

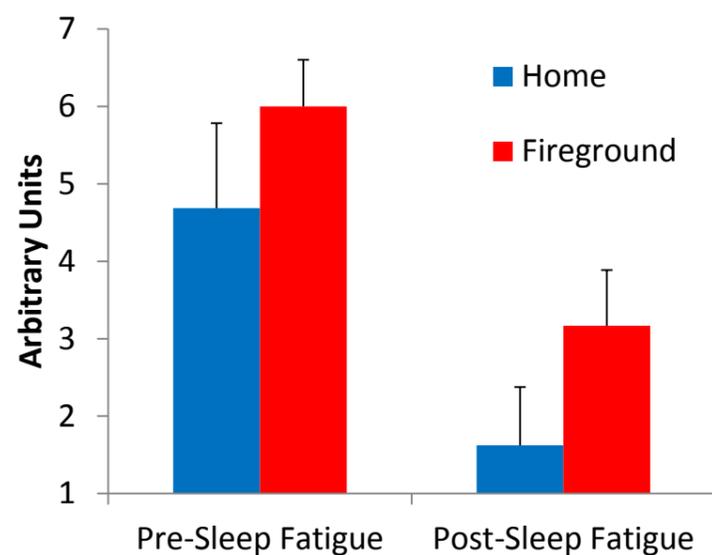


Figure 3: Pre- and post-sleep self-reported fatigue levels during home conditions and wildfire suppression.

1= Fully alert, wide awake; 7= Completely exhausted, unable to function

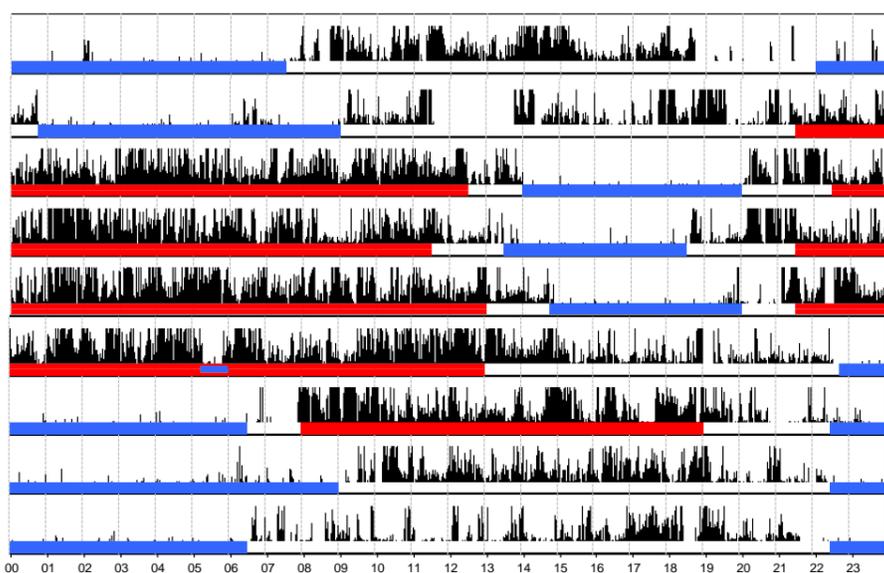


Figure 2: A representative Actogram from one participant. The blue represent sleep periods and the red fire suppression work.

### We need your help!

**Who do we need?** ~50 firefighters across Australia for the upcoming fire season (employed or volunteers)

**What is involved?**

- Wear a wrist activity monitor for 3-days pre-deployment, during a campaign fire or a planned burn and 3-days post-deployment
- Wear a shirt pocket activity monitor during fire suppression
- Complete a sleep and work diary

**Please take a flyer below if you are interested in participating**