# FIRE IN THE LANDSCAPE

Lead End User: Neil Cooper

**Project Leader: Tina Bell** 

FACULTY OF AGRICULTURE, FOOD & NATURAL RESOURCES







# FIRE IN THE LANDSCAPE

Four research projects:

- > 1. Greenhouse gas emissions from fire and their environmental effects\*
- > 2. How does fuel reduction burning influence forest carbon storage?
- > 3. Quantifying water quality risks following bushfire
- 4. Fire and hydrology of south eastern Australian mixed-species forests\*

Shared sites, students, data and outcomes



# CATCHING UP AND KEEPING UP

#### How we are dealing with delays and other technical problems

- Delays due to initial downtime of analytical equipment
  - Solution: Literature review completed early while waiting for parts, simultaneous analysis of material from several different experiments
- Health and family issues and inclement weather
  - Solution: Alternate scheduling of field work, campaign-style field trips with prioritised work tasks, pool of skilled technical staff and willing students
- Tyranny of distance difficult to organise field visits for End Users
  - Solution: Long lead up time (but slow completion of milestones), alternative delivery of site or equipment information
- Attracting students
  - Keep advertising internally and externally



#### WILDFIRE IMPACTS ON HYDROLOGY WITHIN SYDNEY'S DRINKING WATER SUPPLY CATCHMENTS

- > Student: Jessica Heath
- Commenced: March 2010
- Supervisors: Tom Bishop, Chris Chafer, Floris van Ogtrop
- End User: James Lonergan, NSW Parks and Wildlife Service
- Aim: To determine if summer wildfires in 2001-2002 have had an impact on the postwildfire water yield







#### EFFECT OF SMOKE FROM BUSHFIRES ON PLANT PHYSIOLOGY

- Student: Vicky Aerts
- Commenced: October 2010
- Supervisors: Tina Bell, Paul Struik, Mark Adams
- End User: Steven Bishop, Forests NSW
- Aim: To analyse the effect of smoke from prescribed burning and bushfires on agricultural and native plant physiology







#### IS ALIEN PLANT INVASION A THREAT TO BURNING OF AUSTRALIAN FORESTS?

- > Student: Felipe Aires
- Commenced: March 2011
- Supervisors: Tina Bell, Stuart Matthews
- > End User: Neil Cooper
- Aim: To predict and test changes in fuel accumulation and fire behaviour in forests of eastern Australia caused by invasion by woody weeds







# DO WOODY LEGUMES USE FLAMMABILITY TO PROMOTE THEIR PERSISTENCE?

- Student: Valerie Densmore
- Commenced: March 2011
- Supervisors: Mark Adams, Tina Bell
- End User: Steve Bishop, Forests NSW
- Aim: To investigate the interaction of fire, soil nutrient status and occurrence of woody legumes





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