

Ecosystems need people



Grazed and burnt private property on the left, ungrazed and unburnt State Forest on the right



At the Gateway to our National Capital - Native vegetation conservation area on the left, mown rest area on the right



Blue gum at Comboyne: foreground, healthy trees in a clean paddock; on the right, declining trees in a dirty paddock; middle, dying trees in a locked-up paddock



Tuart woodland, slashed suburban buffer on the left and unmanaged National Park on the right



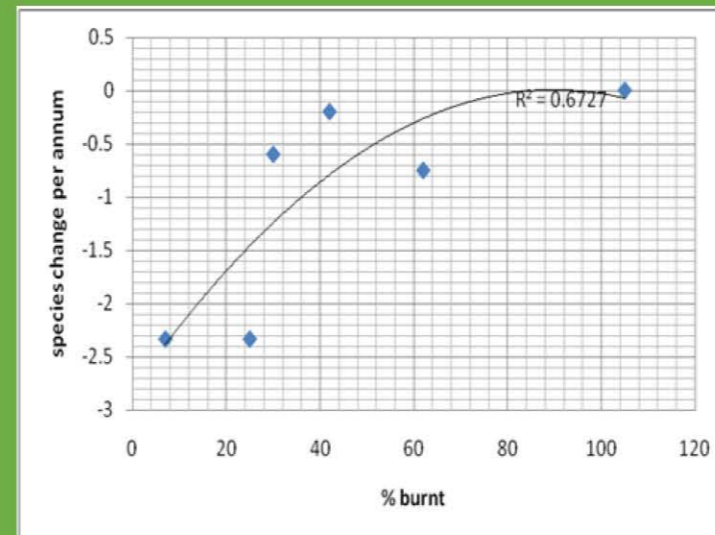
Pink gums on a mown residential block compared with the unmanaged Nature Reserve across the road



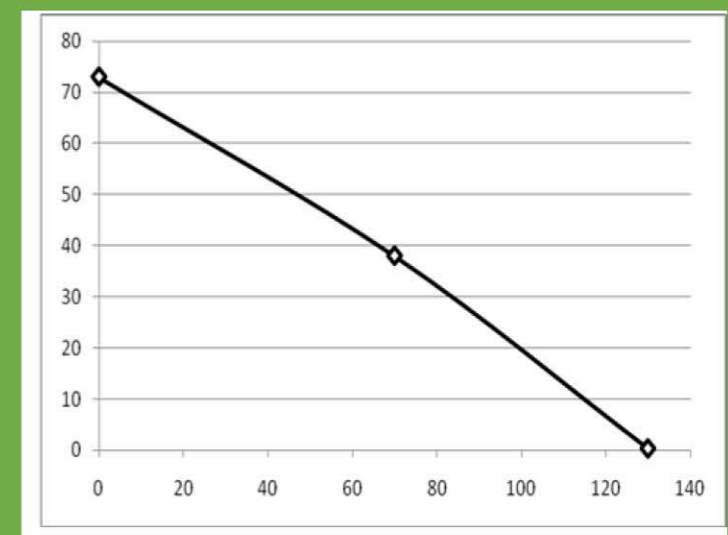
River red gum, grazed and burnt on the left and protected in National Park on the right

Frequent mild burning makes ecosystems healthy and safe

A diverse array of small shrubs, herbs and grasses starts to decline within four years after burning, as a few common shrubs increasingly dominate. Nitrogen accumulates rapidly in the soil 10 years after burning and C:N is reduced, causing nutrient imbalances that are harmful to eucalypts. Canopies decline and pests irrupt. The understory and soil microclimate changes as shrubs develop, shade increases and sunshine and air circulation are reduced. N-fixing shrubs such as acacias and casuarinas may proliferate in a vicious circle. It gets harder to burn in mild conditions. Accumulation of shrubbery, litter, fallen timber and dead bark on trees creates 3-dimensionally continuous fuel that explodes into crownfires and ember storms when ignited in severe conditions, whether by lightning or human agency. An interval of about 5 years between mild burns can maintain healthy nutrient cycles, maximum plant diversity and low levels of discontinuous fuels in eucalypt forests.



In the Eden burning study, plant species richness declined in inverse proportion to the cumulative area burnt

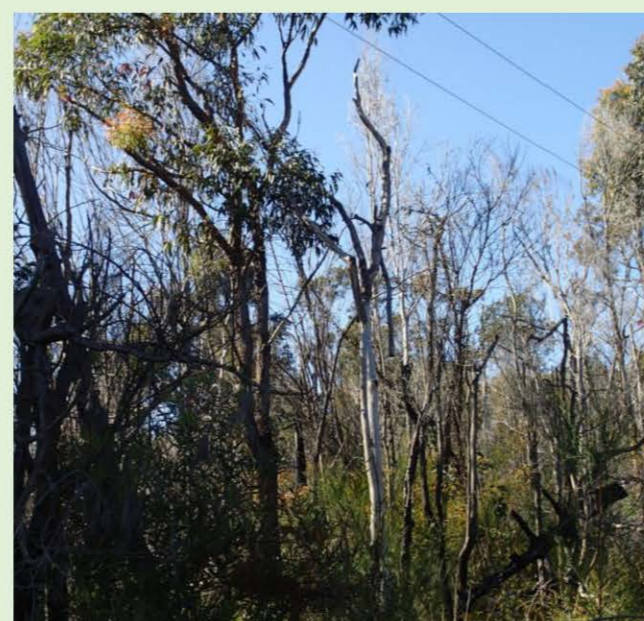


Bellbirds increased (y axis) in inverse proportion to the cumulative area burnt (x axis).

But burning ain't burning. You must do it right.



The wrong way - Prescribed burn Ben Boyd NP 2013, Big old hollow bearing blackbutt and ancient banksias burnt down. Huge loads of heavy fuels and dense shrubbery triggered by germination and resprouting.



The wrong way - Prescribed burning Royal NP wall of fuel from repeated hot burns



A trainee of Victor Steffensen, lighting spots to gradually extend a mild burn, the right type of burning.

Human fire can maintain a balance of nature



Out of balance: trees decline, koalas irrupt and then decline. Frequent mild burning makes ecosystems healthy and safe.



Burning ti tree restored floral and faunal diversity in swamplands at Kybeyan



Healthy and safe on the left, sick and dangerous on the right