

Fire Management

Managing parks
and forests

How you can help

Wildfires can occur at any time of year, but are more common through late winter to early summer. It makes good sense to plan for fire with your neighbours, the community and Queensland Fire and Rescue Service or your local authority. QPWS supports collective, community approaches to fire management.

- Contact the Queensland Fire and Rescue Service through your local rural fire brigade or fire station for detailed advice on fire management plans and protecting your house and property from fire.
Visit www.fire.qld.gov.au or www.ruralfire.qld.gov.au
- Develop a fire management plan for your property, regardless of the size. Fire plans need to be flexible. For guidance on fire planning visit www.fireandbiodiversity.org.au/publications.html
- Obtain a permit from your local fire warden or fire station before doing any burning on your property. Seek advice from your local rural fire brigade. If necessary, arrange help for your burn.
- If your property adjoins lands managed by QPWS, contact the local QPWS office to discuss any fire concerns.
- Firelines can help to protect your property. Keep these areas clear and unobstructed for access.
- Help stop arson. Report any suspicious activity to police. Note the time, location, a description of the person and especially the vehicle registration number.

Report wildfires to 000

Report wildfires immediately to 000. Early reporting may avert a serious wildfire.

For more information

Visit: www.nprsr.qld.gov.au

Email: info@nprsr.qld.gov.au

Phone: 13 QGOV (13 74 68)



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Reducing fuel loads

Fires can be less severe when fuel loads have been reduced. Methods for reducing fuel loads include:

- planned burning
- mechanical methods such as grading, dozing, ploughing or slashing
- using herbicides along control lines
- selective harvesting in forests managed for production.

Fire management zones

Fire strategies provide the framework and direction for managing fire on parks and forests. Fire management zones provide a practical way of identifying, planning and applying appropriate fire regimes across the landscape. Within any one zone there may be one or many vegetation communities or habitats as well as climate characteristics; environmental, cultural or economic values; and a corresponding range of appropriate fire regimes depending on the purposes of the zone. The zones are:

- Protection zone—to provide a high level of protection to life, property and infrastructure
- Wildlife mitigation zone—to increase the likelihood of controlling a wildfire in strategically important areas within a reserve
- Conservation zone—to maintain the natural role of fire as an ecological process
- Sustainable production zone—to maintain the sustainable production and use of forest products (e.g. timber, foliage, pasture)
- Rehabilitation zone—to combat a threatening process that cannot be addressed by the usual fire management practices
- Reference zone—to monitor long-term effects of fire regimes, wildfires or fire exclusion on nature conservation values
- Exclusion zone—to exclude fire totally.

Gathering and using information

QPWS uses the results of fire research programs, and evaluates fires on QPWS lands, to continually refine fire management. Maps and details of fires and ecosystems are stored in geographic information systems. This information is used for a range of activities, such as planning burns and responses to wildfires. QPWS analyses the patterns of fire, and the causes and movement of fires into and from surrounding lands. This analysis helps QPWS to continuously improve operational methods.

Fighting fires

QPWS monitors wildfire risk and fire danger conditions and maintains preparedness levels relative to the risk. Wildfire response procedures are reviewed each year. They detail the information and procedures required for effective response to wildfires in, or threatening, QPWS-managed areas.

QPWS maintains a mobile fleet of fire fighting equipment, including light and medium sized four-wheel-drive fire units. If larger fire units or aircraft support are required, QPWS works closely with the Queensland Fire and Rescue Service. Rangers are trained in forest and grassland fire fighting and are equipped with protective fire wear, communication devices and fire fighting tools.



Photo: Troy Spinks

Case study: Cycads, weeds and fire

QPWS has carried out planned burning to maintain healthy cycad populations in eucalypt forests.

The cycad *Lepidozamia peroffskyana* grows in the understoreys of some wet eucalypt forest communities. If there are no fires for many years, other plants, including the exotic weed lantana, can smother the cycads. Native rainforest plants can also colonise these areas in the absence of fire. These plants include epiphytic bird's nest ferns and elkhorns that attach directly to the cycad trunks, further smothering them.

At two key sites, Springbrook Plateau and D'Aguilar Range, QPWS carried out planned burns after many years without fires. The fires removed the majority of the smothering plants, including the lantana, and cleared the cycad trunks of epiphytic plants. No cycads were killed, and soon after the fires the cycads grew new leaf shoots. These results demonstrated that periodic fire is essential for the long-term health of this cycad species and the eucalypt forest community.



Cycad *Lepidozamia peroffskyana*
Photos: Dave Kington

Climate change and fire management

Under climate change scenarios, longer periods of fire-prone weather are predicted. This may lead to more severe and extensive wildfire in many areas of Queensland, with impacts on safety, property and on our unique biodiversity. Carefully considered planned burning is the best way to mitigate these impacts and enable greater resilience for ecosystems.

In meeting the challenges of climate change, QPWS will continue to refine its fire management programs, and support rangers with improved knowledge and ability to adapt fire management practices within a changing climate. QPWS will do this on its estate by:

- promoting the use of mosaic burning across the landscape
- controlling exotic plants that may increase fuel loads
- minimising effects of fire on ecosystems vulnerable to climate change
- supporting the survival of species vulnerable to climate change by maintaining habitat.



Thatch grass
Photo: John Clarkson



Banksia cone and resprouting Grass trees
Photo: Peter Leeson

Case study: Helping golden-shouldered parrots

The golden-shouldered parrot *Psephotus chrysopterygius* is now restricted to a few small populations in open grass plains and grassy woodlands on Cape York Peninsula. Carefully planned burns in these areas increase this endangered bird's chances of survival.

Some of the grasslands and open woodlands have thickened up with tea trees and other woody plants, probably as a result of past changes in fire patterns. This 'woody thickening' reduces the amount of grasses available to the parrots as food and also helps their predators, such as butcherbirds.

'Storm burns'—fires lit immediately after the first wet season rain—can reduce woody thickening and maintain the open habitats that golden-shouldered parrots need.

Cockatoo grass seeds are a particularly important food for these parrots. Carefully timed, patchy fires increase the amount of cockatoo grass seeds, and increase the length of time the seed is available.

So QPWS and other landholders on Cape York Peninsula are helping golden-shouldered parrots by burning to maintain the open habitats and to improve the supply of grass seeds throughout the year.

Case study: Island fire management

QPWS uses fire to manage national parks on islands as well as on the mainland.

On Hinchinbrook Island National Park, QPWS uses planned burning to:

- reduce the risk of wildfires endangering bushwalkers on the popular, long-distance Thorsborne Trail
- reduce the risk of intense wildfires burning large areas of the island
- maintain a mosaic of burnt and unburnt areas in all vegetation types
- maintain existing eucalypt forests and woodlands, which can be invaded by rainforest species in the absence of fire
- conserve rare and threatened plants, such as the blue banksia *Banksia plagiocarpa* and a wattle *Acacia homacolada*.

Fire management on island national parks involves an additional level of planning. QPWS also carefully considers factors, such as seabird nesting seasons and limitations on vehicles and equipment that can be transported to the island.



Cape Sandwich
Photo: Justine Douglas

Fire management

The role of fire

Fire is a natural and necessary part of Australia's landscape. Fire occurred naturally before humans arrived, and Traditional Owners have been managing fire for many thousands of years. Most forests, woodlands, heathlands and grasslands have evolved with fire and require it to maintain their diversity. Many plants and animals are well adapted to survive fire and some require fire to regenerate.

Some communities such as rainforests and coastal she-oak forests have a lower tolerance to fire. In these communities, planned burns can be used in adjacent areas to reduce the potential impacts of wildfires.

Some animals may die or relocate during fires, but many native fauna species are dependent on fire and specific fire intervals for their long-term survival.

Plants respond to fire in various ways.

- Some trees and shrubs, including eucalypts, re-sprout from dormant buds (epicormic buds on stems and branches or underground lignotubers).
- After fire, banksias and hakeas release seeds from woody fruits that later germinate if conditions are suitable.
- Fire can stimulate grass trees to flower and produce seeds.
- Some acacias and peas germinate after fire from dormant seeds in the soil.
- Smoke promotes germination of some plants, such as spear grass.

Fire can create favourable conditions that promote growth: nutrients stored in leaf litter are released, light reaches the ground and an ideal seed bed is produced. Fire can maintain suitable habitats and food for native animals.

Fire in the landscape can have both beneficial and adverse impacts. Changes in fire intensity, frequency and seasonal timing can alter the number and type of plants in an area leading to changed habitats for plants and animals. In this way, changes in fire patterns can reduce biodiversity in an area.

Managing fire

The Queensland Parks and Wildlife Service (QPWS) manages around 12 million hectares of parks and forests.

A comprehensive Fire Management System guides QPWS in planning, implementing, monitoring, evaluating and reporting its fire management activities.

QPWS manages fire to protect life and property, and to maintain natural diversity. Fire management is therefore an essential part of QPWS land management practices. QPWS bases its fire management on the best available knowledge of fire behaviour, ecology, suppression and prevention.



Working together

QPWS works closely with other government departments that have fire management responsibilities as well as external agencies, rural fire brigades, adjoining landholders, local communities and Traditional Owners.

This includes coordination, cooperation and active participation across boundaries in:

- constructing and maintaining firelines
- notifying relevant people and agencies of intention to burn
- arranging access to property
- training in fire management
- undertaking burning operations
- developing wildfire response plans.

This cooperative approach is critical in maintaining a balanced approach to the environmental and social aspects of fire.

Planned burns

Planned burning is an important technique used by QPWS and other land management agencies in Australia.

QPWS uses fire to:

- reduce fuel loads, in order to decrease risk to life, property and assets
- maintain biodiversity, by burning areas of varying size at appropriate intervals
- help restore and regenerate disturbed ecosystems
- aid pest eradication and control.

When carrying out planned burns, QPWS targets weather conditions that suit the aims of the burn and that minimise impacts on surrounding urban and rural communities.