

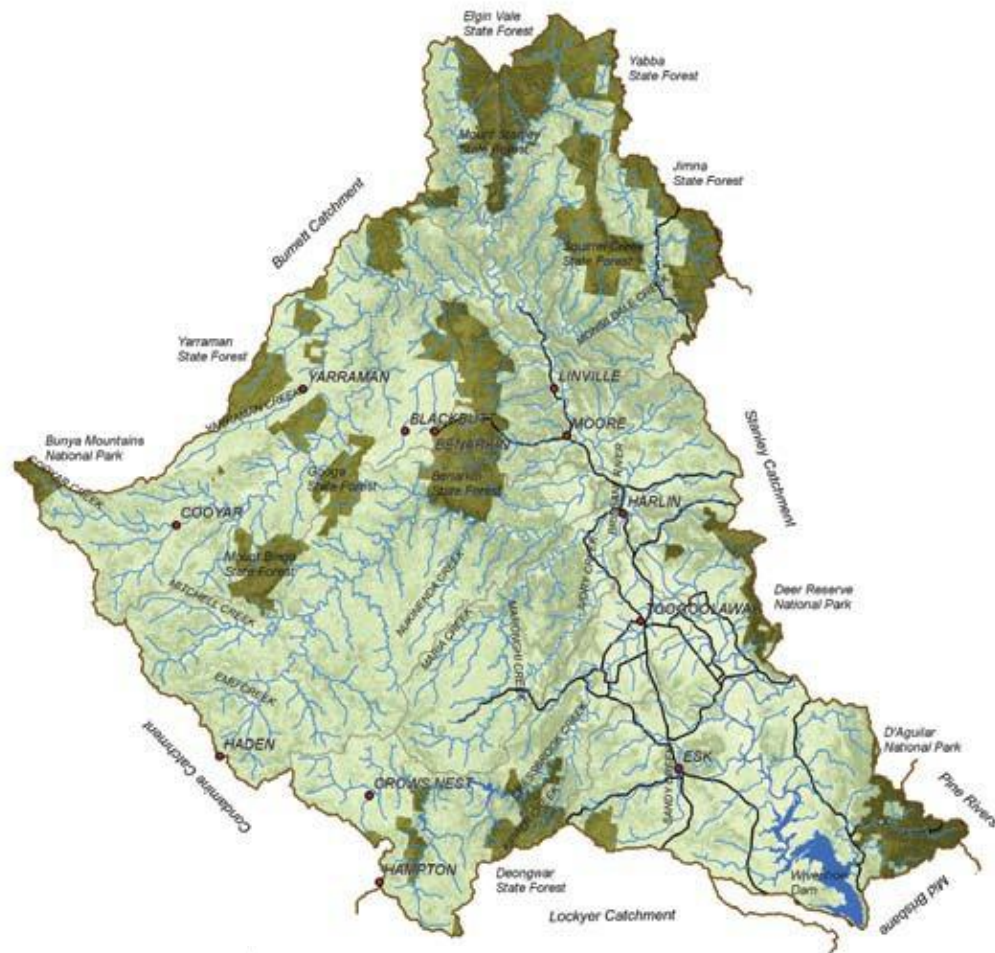
Upper Brisbane catchment



The Upper Brisbane Catchment covers 5,493 km² extending from the headwaters along the Great Dividing Range in the West, Brisbane and Jimna Ranges in the North and the D'Aguiar Range through a wide valley surrounding the Brisbane River to Wivenhoe Dam. The catchment is dominated by eucalypt woodlands and open forest and contains a wide range of other significant vegetation communities, including dry rainforest and vine thickets, tall open forests, brigalow and fringing riparian communities.

Healthy Land & Water works in partnership with landholders, community groups, government, corporate businesses, Traditional Owners, education and research organisations and schools to protect, repair and rehabilitate the catchments of South East Queensland. A large proportion of the work on the ground is achieved by landholders and volunteers involved in community groups, such as the Rosalie North Landcare Group, Emu Creek Catchment Landcare Group, Ravensbourne and District Landcare Group, Crows Nest Creek Catchment Group, Brisbane Valley-Kilcoy Landcare Group, Blackbutt/Benarkin Friends of the Earth, Animals and Trees. The Upper Brisbane Region Catchment Network provides an overarching forum for these local groups, industry organisations and Regional Councils in the catchment.

UPPER BRISBANE CATCHMENT





Upper Emu Creek



Rocky Dip Reserve



Managing biodiversity

Biodiversity refers to the variety of all life forms - the different plants, animals and microorganisms, the genes they contain, and the ecosystems of which they form a part.¹ Wildlife habitat areas have declined across the catchments as human and climatic pressures have increased. The vulnerable Black-breasted Button quail and the Yellow-bellied Glider, amongst others, need their remaining habitat areas to be protected and enhanced while other species require corridors to link fragmented areas to assist them to move and adapt to changing conditions in the landscape. Environmental weeds and pest animals typically outcompete native flora and fauna, causing declines in local populations and degradation of ecosystems.

Some regional ecosystems in which many of these species live are also under threat and require protection from encroaching weeds and pest animals, changed land uses and inappropriate management practices. Regional ecosystems are distinct communities of native vegetation that are consistently associated with a particular combination of geology and landforms within a bioregion.² The Upper Brisbane Catchment contains a number of threatened regional ecosystems, including the endangered *Eucalyptus tereticornis* woodland to open forest on alluvial plains (categorised as RE 12.3.3), which has been significantly modified and fragmented due largely to historic clearing for agriculture, settlement and infrastructure.

In an effort to protect and enhance priority ecosystems and improve connectivity across the Upper Brisbane catchment, Healthy Land & Water works with landholders, Landcare and conservation groups by mapping priority management areas and coordinating and monitoring on-ground works including strategic weed removal, fencing to allow natural regeneration, fire management and revegetation.

One example of Healthy Land & Water's partnerships is the D'Aguiar Range Biodiversity Corridors Reconnection project. Healthy Land and Water, Seqwater, the Queensland Government, researchers, land managers and community groups are working together to protect remnant vegetation and reconnect biodiversity corridors between the lake environs of the Brisbane, Stanley and Pine catchments and the iconic D'Aguiar Range. The proposed corridors will help buffer the large aquatic ecosystems around Lakes Wivenhoe, Somerset and Samsonvale and provide valuable connections between remnant regional ecosystems and altitudinal linkages to the D'Aguiar Range to enhance animal and plant movement, habitat values, water quality and ecosystem health.

The voluntary Land for Wildlife program is another significant biodiversity initiative, where participating landholders agree to manage their land in ways that protect and enhance wildlife habitat. Land for Wildlife is coordinated regionally by Healthy Land and Water with more than 50 landholders in the catchment participating in this program, which and is available to all landholders with over one hectare in the Upper Brisbane Catchment.

NATURAL ASSETS

- Biodiversity
- Productive land
- Natural areas
- Waterways

Managing the land

The dominant land use across the catchment is grazing of beef cattle, with dairying and farming concentrated along fertile alluvial valleys and basalt uplands. The timber industry remains significant with production from managed native forest and large areas of Hoop Pine plantations. Other main land uses in the catchment include large areas of natural bushland both in protected areas and private holdings, water supply dams and an increasing number of lifestyle blocks, which support a vast array of alternative agricultural pursuits, nature conservation and traditional farming practices.

Natural protected areas of the Upper Brisbane catchment include the Bunya Mountains, Crows Nest, Ravensbourne, The Palms, Deer Reserve and D'Aguilar Range National Parks and the Cressbrook Conservation Park. Other significant protected areas include State Forest Reserves at Mt. Binga, Googa, Benarkin, Yarraman, East Nanango, Mt Stanley, Diaper, Yabba, Squirrel Creek and Jimna. The natural and rural landscapes of the Upper Brisbane catchment offer a range of outdoor, nature-based and recreational opportunities.

Agricultural and conservation land faces increasing challenges in parts of the catchment. Climate change predictions suggest that impacts over the coming decades are expected to include more intensive storms and temperature rises leading to habitat loss and heat stress on livestock. Population growth in the region, along with its consequential supply and demand pressure on primary production and natural resources, raises further challenges for land management in the catchment. The increased demand for rural residential living has been most apparent around Crows Nest, Esk, Toogoolawah, Blackbutt and Yarraman.

It is important to adopt sustainable grazing practices to ensure the land is maintained in good condition, comprising of healthy diverse pastures and stable soils with high levels of groundcover all year round. Given the highly variable climate, grazing land should be managed and monitored to ensure stocking rates are matched to pasture availability. It is important that grazing systems incorporate regular rest or spelling to enable pastures to rest and recover particularly following major disturbances such as drought and fire, to minimize soil erosion and land degradation. Impacts of poor land condition include loss of productivity, and sediment and nutrient loss from overgrazed areas, gully and streambank erosion, which all have significant impacts on aquatic ecosystems in the upper Brisbane River and downstream water quality entering Wivenhoe Dam.

Well-planned fire management regimes can also be an effective tool to manage pastures and natural areas by minimising damage to soil structure, habitats, wildlife, native vegetation and pastures.

Healthy Land & Water offer incentives and advice to land managers, such as those involved in the Sustainable Land Management Practices project in the Emu Creek Catchment and the Erosion Control demonstration sites in the Ivory-Maronghi area. Healthy Land and Water also provide opportunities for land managers to increase their knowledge and skills in sustainable land management at field days and workshops and offer Property Management Planning services including property maps to assist landholders to better plan and manage their properties making their enterprise more sustainable.

Managing water quality

With its headwaters in the Brisbane Range, the Brisbane River flows South, where it is joined by major tributaries including the Cooyar, Monsildale, Emu, Ivory, Maronghi, Cressbrook and Esk Creeks, before flowing into Lake Wivenhoe.

Maintaining water quality is important for the health of the catchment and all that lives in it. Sustainable management practices prevent land degradation and can increase productivity by improving land condition and soil health, retaining groundwater and minimising soil erosion and nutrient and sediment losses to the waterways. The protection of riparian vegetation plays a significant role in stabilising creek and riverbanks and maintaining waterway health.

It is particularly important for the waterways flowing into Wivenhoe Dam to be healthy, as it is the principal water supply storage for South East Queensland. Healthy Land and Water encourages the adoption of sustainable land management practices, such as the protection of riparian species and sustainable land management practices to enhance waterway health.

MAJOR THREATS

- Climate change
- Population growth and development
- Unsustainable land use
- Inappropriate use of fire
- Habitat fragmentation
- Weeds and pest animals
- Sand and gravel extraction





Case Study: Red Goshawk

The Red Goshawk (*Erythrotriorchis radiatus*) is one of the rarest birds of prey in the world and is endemic to Australia.³ The bird is found in sparsely distributed habitats in northern and eastern Australia, including some woodlands and forested areas of the Upper Brisbane Catchment.⁴

This rare bird is listed as endangered in Queensland and is estimated have less than 1000 of its kind remaining in Australia. Habitats required for breeding are very specific as they will only nest in trees taller than 20 meters and must be within one kilometre of water.⁴

Healthy Land & Water, land holders and other partners are working to protect, reconnect and rehabilitate the degraded and fragmented habitat areas of native species, including the Red Goshawk, in the Upper Brisbane catchment and other parts of the South East Queensland region.



REFERENCES

¹ National Biodiversity Strategy Review Task Group 2009, *Australia's Biodiversity Conservation Strategy 2010–2020, Consultation Draft*, Australian Government, Department of the Environment, Water, Heritage and the Arts, Canberra, ACT.

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³ Commonwealth of Australia 2009, *Erythrotriorchis radiatus — Red Goshawk*, [Internet]. Available at: www.environment.gov.au/cgi-bin/sprat/public/publicspecies.pl?taxon_id=942

⁴ Birds Australia 2009, *Conservation, Red Goshawk*, [Internet]. Available at: www.birdsaustralia.com.au/our-projects/red-goshawk.html



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