



Binna Burra plateau



SOUTHERN REGION CATCHMENTS

The Southern Region Catchments cover 1316 km² of picturesque landscapes ranging from mountains and waterfalls in the hinterlands, including the world renowned Lamington National Park, through valleys and fresh wetlands, to the Gold Coast cityscape, tidal wetlands, and into the Moreton Bay and the Pacific Ocean marine environment.

SEQ Catchments works in partnership with landholders, government, corporate businesses, Traditional Owners, education and research organisations, schools, not-for-profit and community groups 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 Landcare groups of Austinville, Beechmont, Springbrook, Numinbah, South Stradbroke Island, North East Albert and Tamborine Mountain, Gold Coast and Hinterland Environment Council and numerous other groups including BeachCare and Bushcare.

The Region



Legend

- Towns
- Subcatchments
- Roads
- Streams
- Waterbodies
- Protected Areas



Burleigh beach



SOUTHERN REGION CATCHMENTS



Crabholes

Natural Assets

- Biodiversity
- Productive land
- Natural areas
- Waterways
- Coastal and marine areas

Coast boardwalk along wetland



Major Threats

- Climate change
- Population growth and development
- Unsustainable land use
- Habitat fragmentation (terrestrial, aquatic and marine)
- Weeds and pest animals
- Pollution in waterways

Biodiversity

Biodiversity refers to the *variety of all life forms - the different plants, animals and micro organisms, the genes they contain, and the ecosystems of which they form a part.*¹ The Southern Region Catchments are home to more than 1300 animal and 1750 plant species.² Large areas of wildlife habitat have been damaged as a result of development to meet the needs of the growing population. The endangered Giant Barred Frog, vulnerable Koala and rare Albert's Lyrebird, among others, need remnant vegetation and corridors to link remnant areas and create paths for movement in order to adapt to different environments and changing climatic conditions. Environmental weeds and pest animals typically outcompete native flora and fauna, causing the local populations to diminish.

Some regional ecosystems in which many of these species live are also under threat and require protection from encroaching weeds, pest animals, urban development and mismanaged land. Regional ecosystems are communities of vegetation that are consistently associated with a particular combination of geology, land form and soil in a bioregion.³ The Southern Region Catchments consist of a number of threatened regional ecosystems, including the endangered Blackbutt open forest, which has been significantly modified and fragmented due largely to historic clearing for agriculture, settlement and infrastructure.³

In an effort to protect and restore the important biodiversity and natural assets, SEQ Catchments works with Landcare, catchment and conservation groups across the Southern Region Catchments to enhance biodiversity and riparian corridors and restore gallery rainforest areas. This is undertaken by mapping priority management areas, removing weeds such as Lantana, Madeira Vine and Camphor Laurel, planting native plants, monitoring water quality, creating habitats for native animals and plants, and supporting landholders to undertake sustainable land management practices to achieve increased productivity and profitability.

Environmental education programs coordinated by SEQ Catchments in partnership with schools and youth organisations, including Weed Warriors and Toad Busters, and other existing programs, provide practical, hands-on activities which are aimed at increasing awareness and understanding of local native species, and impacts of pest animals and weeds on those species.

The voluntary Land for Wildlife program also enhances biodiversity values as landholders agree to manage their land in ways that protect and enhance wildlife habitat. There are more than 380 landholders in the catchment participating in this program, which is coordinated regionally by SEQ Catchments and delivered by the Gold Coast City Council.

Managing the Land

The Southern Catchments is a rapidly growing region and supports grazing, lifestyle blocks, cane, urban and industrial development, transport corridors and natural areas.

The natural areas comprise of national parks, reserves and conservation areas, including the National Parks of Tamborine, Springbrook, Lamington, Binna Burra and Burleigh Heads; Numinbah, Nerang Forest Reserve, Pine Ridge

Managing the Land contd

Conservation Park, Coombabah Lakelands, Nicoll Scrub National Park, Currumbin Reserve, Lower Beechmont and Tugun Hill Conservation Areas, Miami Bushland Conservation Reserve, Parkwood Reserve, and Guanaba George (an Indigenous Protected Area).

The region also contains internationally recognised areas, including the Coombabah Lakelands Conservation Area (part of the Moreton Bay Ramsar site) with its migratory wader bird and fish habitat; Springbrook and Lamington National Parks, part of the Gondwana Rainforest World Heritage Area. Lamington National Park has one of the largest upland subtropical rainforest remnants in the world. The region is also within the Border Ranges Biodiversity Hotspot.

Agricultural and conservation land faces increasing challenges in parts of the catchment. Climate change modeling predictions suggest that impacts over the coming decades are expected to include more intensive storms, rising sea-levels leading to coastal flooding and erosion, temperature rises leading to habitat loss for many native species; and raised sea levels and tidal extremes increase the likelihood of coastal erosion.⁴ The Southern Region has an agricultural history of dairy and grazing, which is now diminishing as the good quality agricultural land is fragmented for housing and other development. The tourism industry in the region has also risen dramatically, placing additional pressure on local catchments.

Sustainable land management practices can reduce degradation and increase productivity in part by maximising groundcover to reduce exposed soil and erosion, improve soil health, retain groundwater and stem the flow of sediment to the waterways. SEQ Catchments in collaboration with Landcare Australia and partners have been planting trees in the Southern Region Catchments to restore native vegetation and waterways through the eTrees program. SEQ Catchments also provide opportunities for land managers to increase their knowledge of sustainable land management at field days and workshops; and offer Property Management Planning services including property maps to assist landholders to better plan their property, making their enterprise more sustainable.

Coastal development



Managing Water Quality

The Southern Region Catchments consists of three river systems, many creeks and tributaries, numerous water supply dams and weirs, lakes, fresh water, tidal wetlands, and marine environments. The headwaters of the Nerang River in the McPherson Ranges flows through the Numinbah Valley before entering Hinze and Little Nerang Dams. The Coomera River flows from its headwaters in Lamington National Park to the Northern Broadwater, whilst the Pimpama River flows into the Northern Broadwater and southern reaches of Moreton Bay. Some of the main tributaries include the Biggera, Coombabah, Loders, Mudgeeraba, Tallebudgera, Currumbin, Flat Rock, Bonogin, Coolangatta, Back, Cave, Clagiraba and Canungra Creeks.

The pressures of an increasing population are having significant impacts on the quality of water and hydrology of river systems in the Southern Region Catchments. The rapid expansion of urban areas is impacting on sediment and pollution loads to creeks; while extensive canals have impacted the structure and hydrology of some river systems.

Challenges for managing catchment health are on the rise as land uses change, pollution increases, and recreational and commercial use of the waterways becomes more popular. Loss of mangroves in the bay has been particularly prevalent and has consequently reduced mangrove functions such as trapping sediment, reducing erosion and providing a breeding ground and nursery for fish and other species. Recreational activities have also caused damage to aquatic and marine habitat.

As a result of land use changes and unsustainable land management practices, high sediment loads and nutrient concentrations in the waterways have led to a loss of seagrass beds, which are an important food source and habitat for marine life.

Healthy water quality is important for maintaining the health of the catchment and all that lives in it. Sustainable land management practices, including the protection of riparian species, play a significant role in stabilising creek and river banks and maintaining waterway health. SEQ Catchments and partners are working together to improve water quality in the catchment through sustainable land management practices, monitoring water quality and protecting habitat of native species, including the rare Green Thighed Frog found in Loders Creek.

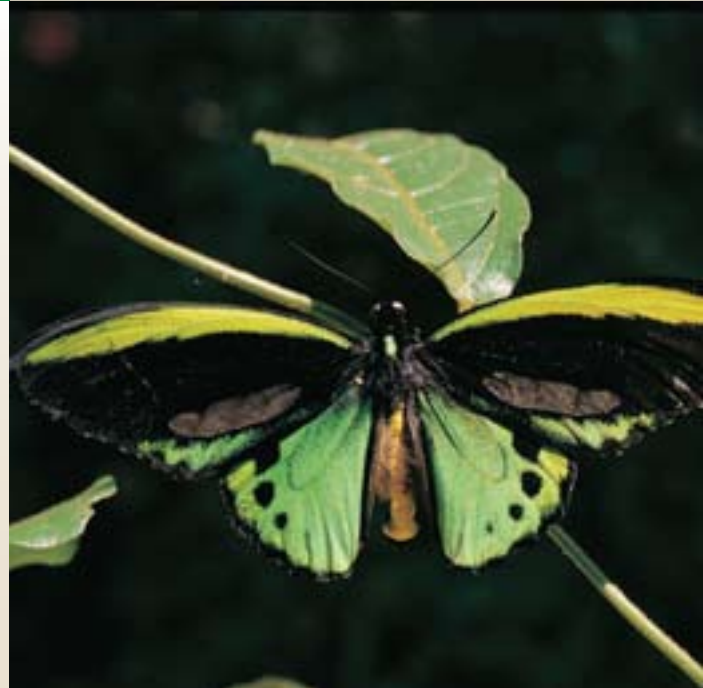
Richmond Birdwing Butterfly

CASE STUDY

The Richmond Birdwing Butterfly (*Ornithoptera richmondia*) is one of Australia's largest and most spectacular butterflies. Once abundant in South East Queensland, this spectacular butterfly has now become locally extinct from two-thirds of its original range due to habitat destruction and weed invasion. Today only several isolated colonies of this spectacular butterfly remain on the Gold and Sunshine Coast hinterlands and parts of northern New South Wales.

The sole source of food for the Birdwing caterpillars is the leaves of the Richmond Birdwing Vine (*Pararistolochia praevenosa*), a rainforest plant once common in South East Queensland. Dutchmans Pipe Vine (*Aristolochia elegans*), has become a common weed in the Birdwings habitat. This weed is closely related to the native vine and emits a substance that tricks the female into laying her eggs on its leaves, however these leaves are poisonous to the hungry caterpillars, making reproduction even more challenging.⁵

SEQ Catchments, ENERGEX and Gecko Regen (Gold Coast and Hinterland Environment Council) are working together to assist in the recovery of this rare butterfly by facilitating the propagation of the Richmond Birdwing vine.



Richmond Birdwing Butterfly



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.
- ² The Council of the City of Gold Coast 2009, *Facts and figures*, [Internet]. Available at: www.goldcoast.qld.gov.au/t_standard.aspx?PID=255
- ³ The State of Queensland (Department of Environment and Resource Management) 2010, *Regional Ecosystems*, [Internet]. Available at: www.derm.qld.gov.au/wildlife-ecosystems/biodiversity/regional_ecosystems/details.php?reid=12.11.23
- ⁴ The State of Queensland (Department of Environment and Resource Management) 2010, *Threatened Species*, [Internet]. Available at: www.derm.qld.gov.au/wildlife-ecosystems/wildlife/threatened_plants_and_animals/index.html

For more information

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