

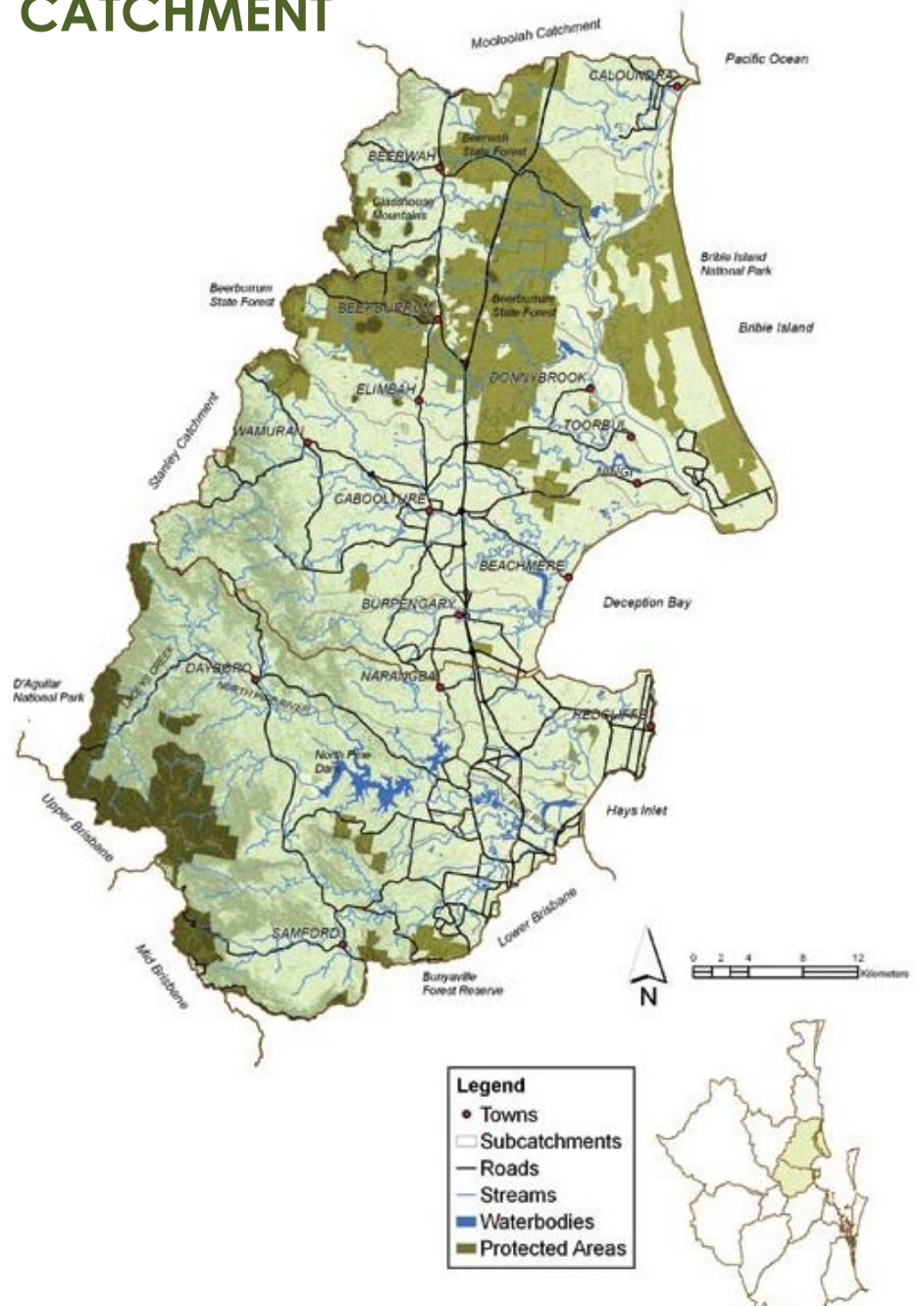
Pine & Pumicestone catchment



The Pine and Pumicestone Catchments cover 2,100 km² stretching from Caloundra and Bribie Island in the North to the Pine River in the South. The Catchments include significant areas such as the Pumicestone Passage, Glasshouse Mountains, Hays Inlet and Tinchi Tamba Wetlands, which are bounded in the West by the D'Aguilar Range and by Moreton Bay in the East.

Healthy Land & Water works in partnership with landholders, government, corporate businesses, Traditional Owners, education and research organisations, schools 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 Pine Rivers Catchment Association, Friends of CREC, Bribie Island Environmental Protection Association, Friends of Woorim Beach, Friends of Lagoon Creek, Night Eyes (Caloundra), Redcliffe Environment Forum and numerous Bushcare and other environmentally focused groups.

PINE AND PUMICESTONE CATCHMENT





Orange Crab



Pineapple plant



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 The diverse habitats in the Pine and Pumicestone Catchments range from mangroves to rainforests, and provide homes to numerous flora and fauna species. The endangered Loggerhead Turtle, and the vulnerable Dugong and Wallum Froglet, among others, need healthy marine, freshwater and terrestrial environments, and corridors for species to migrate and adapt to different environments and changing climatic conditions. Environmental weeds and pest animals typically outcompete native flora and fauna, causing declines in local populations.

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 natural communities of vegetation that are consistently associated with a particular combination of geology, land form and soil in a bioregion.²

In an effort to protect and restore the important biodiversity values, Healthy Land and Water works with Landcare, catchment and conservation groups across the Pine and Pumicestone catchments to enhance biodiversity and riparian corridors by mapping priority management areas, removing weeds such as Lantana and Cats Claw creeper, planting native plants, monitoring water quality, creating habitats for native animals and plants, and supporting landholders to undertake sustainable land management practices.

Healthy Land & Water is working with over 35 landholders in the Pumicestone and Upper Stanley Catchments to enhance vegetation management planning and practices. Landholders are supported with advice and incentives for fencing, revegetation and weed removal to improve the condition and connectivity of native vegetation and subsequently, the health of the catchments.

Koala habitat has been lost due to changed land uses and the increased traffic flow. Healthy Land and Water is working with community groups, corporate businesses and government in urban areas around Moreton Bay to protect and restore koala habitat. Fragmented vegetation corridors are being reconnected with eucalyptus tree plantings and natural regeneration to provide important habitat, breeding areas and food sources for koalas.

Healthy Land & Water, Seqwater, the Queensland Government, researchers, land managers and community groups are also working together to protect remnant vegetation and reconnect biodiversity corridors between the lake environs of the Pine, Brisbane and Stanley Catchments and the iconic D'Aguilar 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'Aguilar Range to enhance animal and plant movement, habitat values, water quality and ecosystem health.

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 420 landholders in the Pine and Pumicestone catchments participating in this program, which is coordinated regionally by Healthy Land & Water and delivered across the area by Land for Wildlife officers in the Moreton Bay and Sunshine Coast Regional Councils.

NATURAL ASSETS

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



Managing the land

The Pine and Pumicestone Catchments host a diverse range of land use activities including horticulture, grazing, forestry, aquaculture, poultry, extractive industries, natural areas, lifestyle blocks and urban areas. The natural areas include the National Parks of the Glasshouse Mountains and Bribie Island, Pumicestone Passage Marine Park, Mt Mee State Forest, Hays Inlet Conservation Park, Tinchi Tamba Wetlands Reserve, D'Aguiar Range (including Brisbane Forest Park) and Bunyaville State Forest.

The high build up of silt carried down by the numerous creeks which flow eastward across the coastal lowlands has formed vast tidal flats at the Southern half of Pumicestone Passage. The intertidal flats, saltmarsh, claypan and mangroves are important to many species of migratory and non-migratory wading and waterbirds that use the sites for feeding and roosting. The Pumicestone Passage and Hays Inlet are listed and part of the Moreton Bay Ramsar site as feeding and roosting sites for migratory birds. These mangrove fringed wetlands contain extensive seagrass meadows and are valuable nursery areas for commercial and recreational fishing.

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, rising sea levels leading to coastal flooding and erosion, and temperature rises leading to habitat loss for many native species. Healthy Land and Water supports research and implementation of community-based climate change adaptation across the catchments. 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.

Healthy Land and Water is working with land managers and other partners to enhance the Pine and Pumicestone Catchments by improved pasture and nutrient management including on-farm composting and other organic soil improvements. Healthy Land and Water is also working with primary producers on an initiative led by the Department of Primary Industries and Fisheries (DPI&F) to enhance sediment and nutrient retention on pineapple and strawberry farms. Advice, field days and incentives are provided to assist the adoption of sustainable land management practices, such as the use of living mulch, which reduces nutrient and sediment runoff into waterways and Moreton Bay.

MAJOR THREATS

- Climate change
- Population growth and development
- Unsustainable land use
- Habitat fragmentation
- Weeds and pest animals



Managing water quality

The headwaters of the North and South Pine Rivers and Caboolture River at the D'Aguiar Range flow across farmlands, wetlands and urban areas into Moreton Bay. There are many creeks, including Burpengary, Bells, Mellum, Elimbah Saltwater and Freshwater Creeks, the North Pine Dam and Lakes Samsonvale and Kurwongbah.

Healthy water quality is important for maintaining the health of the catchment and all that lives in it. Sustainable land management practices can reduce degradation and increase productivity by maximising groundcover to reduce soil erosion from wind and water, improve soil health, retain groundwater and stem the flow of nutrient and sediment flow to the waterways.

The protection of riparian species plays a significant role in stabilising creeks and riverbanks and maintaining waterway health. Freshwater and tidal wetlands are also important as they reduce flood impacts, absorb pollutants, improve water quality and provide habitat for animals and plants.³

Healthy Land and Water works with community groups and land managers to improve water quality in the catchments by undertaking water quality monitoring, protecting and restoring riparian and wetland vegetation and reducing erosion and sediment loss partly by stabilising streambanks.

The seagrass beds of Pumicestone Passage are particularly vulnerable to turbid water arising from soil erosion in the catchments. This is because it reduces the amount of sunlight that can penetrate through the water and seagrass requires sunlight to photosynthesise or produce energy.



Case Study: Estuarine Wetlands

Estuarine wetlands typically occur in low lying marine areas, have high biodiversity values and support many threatened and migratory animal species, including the Bar-tailed Godwit.

These wetlands act as a filter, assisting the cleaning of water entering areas such as Moreton Bay from the upper catchments.

The Hays Inlet Conservation Park in the Pine Rivers Catchment consists of intertidal mudflats, salt marshes and mangroves, which provide important habitat, breeding grounds and food sources for a variety of plants and animals.

The estuarine wetlands in Hays Inlet are under significant pressure from changed urban and rural land uses, pollution and inappropriate recreational use. Healthy Land and Water is working with community groups and government to protect, rehabilitate and raise awareness of the values and appropriate management of estuarine wetlands in Hays Inlet and surrounding catchments.



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 State of Queensland (Department of Environment and Resource Management) 2010, *Vegetation Communities*, [Internet]. Available at www.derm.qld.gov.au/vegetation/bioregions.html
- ³ Commonwealth of Australia 2009, *About Wetlands*, [Internet]. Available at: www.environment.gov.au/water/topics/wetlands/about/index.html



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 for **future generations to thrive**

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