

An aerial photograph of a wetland area. In the center is a dark, irregularly shaped pond surrounded by dense green vegetation and trees. To the right of the pond is a large, flat area covered in bright green algae or aquatic plants. In the upper left, several residential houses with grey roofs are visible, separated from the wetland by a paved road and some landscaping. The entire image is overlaid with a pattern of thin, white, concentric curved lines that emanate from the bottom left corner.

FAIRFIELD FRESHWATER WETLANDS



A summary of Council's Environmental Management Plan (EMP) for the School Lagoon wetland in the suburb of Idalia and historic locality of Quealban.

An oasis for birds in the middle of a suburb

Crikey! Imagine having a hotspot for amazing birds, turtles, fish, and frogs in your own backyard? A haven that provides food, habitat, and protection.... neighbourhood wetland.

Well look no further, Fairfield Freshwater (School Lagoon) Wetland is the most easily accessible in Townsville for residents to enjoy birdwatching and experience the dry tropics.

Because it is connected to groundwater, the wetland still has water and food in the dry season when other wetlands around the city have dried up. Because of this, it holds very high conservation value for waterfowl and aesthetic values for residents and the wider community. It's a habitat, not a lake.

It's not just water birds - Unique natives such as the Rufous-throated honeyeater can be seen in the wetland and very few other places around town.

Not just for the birds...

Creekwatch is a community group that, with the support of Council, monitors the health of the wetlands. Through their fish monitoring, they have identified an array of fish species (native and exotic) and a large population of freshwater turtles.

Main image: Plumed whistling ducks taking flight
Insert: Rufous-throated honeyeater

The wetland is home to hundreds of ducks, magpie geese, herons, spoonbills, cormorants and sometime pelicans, attracted by the food it produces.



Fishy, feathered, and floaty neighbours

Floating plants provide food and habitat for your fishy, feathered and floaty neighbours. If it's constantly removed, there will be no food left and the wetland will lose much of its bird life that is loved by residents.

If all vegetation were routinely removed from the surface of the water, the system could move from its current healthy plant dominated system, toward an unhealthy algal dominated state which can increase the risk of odour, algal blooms and fish kills.

Council will not remove native vegetation from a natural area. However, if exotic weeds begin to dominate the wetland, Council will work to remove the pest species using a risk-based approach under the TCC Biosecurity Plan.

Images below:

Left: Velvet knotweed *Persicaria sp.* Is a native annual herb growing to 70cm. While it appears to encroach into the wetland, it dies off annually and doesn't establish.

Right: *Azolla sp.* A floating native aquatic fern which can turn red in full sunlight and provides good grazing for fish.



Healthy wetlands

Aquatic plant dominated wetlands

- Low turbidity
- Low nutrients
- Low algal counts
- Lower temperatures

Aquatic plant reduces

Algal dominated wetlands

- High turbidity
- High nutrients
- High temperatures
- Aquatic plants removed/reduced

Aquatic plant reduces

Unhealthy wetlands

Blue-green algae dominated wetlands

- Blue-green algae frequently bloom
- High turbidity
- High nutrients
- High temperatures

Increasing aquatic plant cover

Low risk

Increasing risk of odour, toxic algal blooms, and fish kills

High risk

When is the bad guy really a good guy?

Native plants, like duckweed, can appear to be the bad guy as they can look like floating algae and look messy, but did you know it provides excellent food for ducks?

A lot of the floating plants in the wetland are natives, these include Ferny and Red Azolla, Water Primrose, Velvet knotweed and Hornwort.

Not only do aquatic plants provide food, but they also provide shade and nutrient cycling, and reduce the likelihood of toxic algal blooms, which can cause odour and even kill fish. This is why Council do not remove native plants to improve views.

The main impacts on water quality in the wetland is not from floating plants, it's from stormwater transporting fertiliser, grass clippings, pet droppings and soil from the surrounding neighbourhood into the wetlands.

The duckweed that you think is naughty is actually innocent and ducky, and helps the health of this wetland.

Images below:

Left: Duck eating duckweed *Lemna sp.*

Right: Duckweed close up





Aerial photo of Idalia 1938

Forever changing and messy, just like life

Your neighbourhood wetland is constantly changing with the seasons in the dry tropics – from being filled with water in the summer, to almost drying up in the winter, and everything in between. It never looks the same.

This wetland has been here for a very long time, in fact it was here even before the Idalia suburb was developed (alongside the former Quealban Train Station and the previous Ooonoonba State School). The wetland experiences high levels of evaporation from September to December. In most years, the wetlands shrink to only 10-15 meters of water across, and to a depth of less than 0.5m. This is a natural process and leaves much of the perimeter banks exposed. This drying up acts to naturally suppress weeds.

As water dries up in other wetlands across the city in winter, it is common to see large numbers of migrating birds seeking refuge, water and food along the exposed banks. These welcome guests (native waterfowl) add nutrient to the system (bird droppings and they disturb the sediments) which is a natural process.

The arrival of water birds in large numbers can combine with warmer temperatures, longer days and stormwater inflows from summer rain events to increase ecological risks during the summer months (algal blooms, excess weed growth, odour and fish kills).

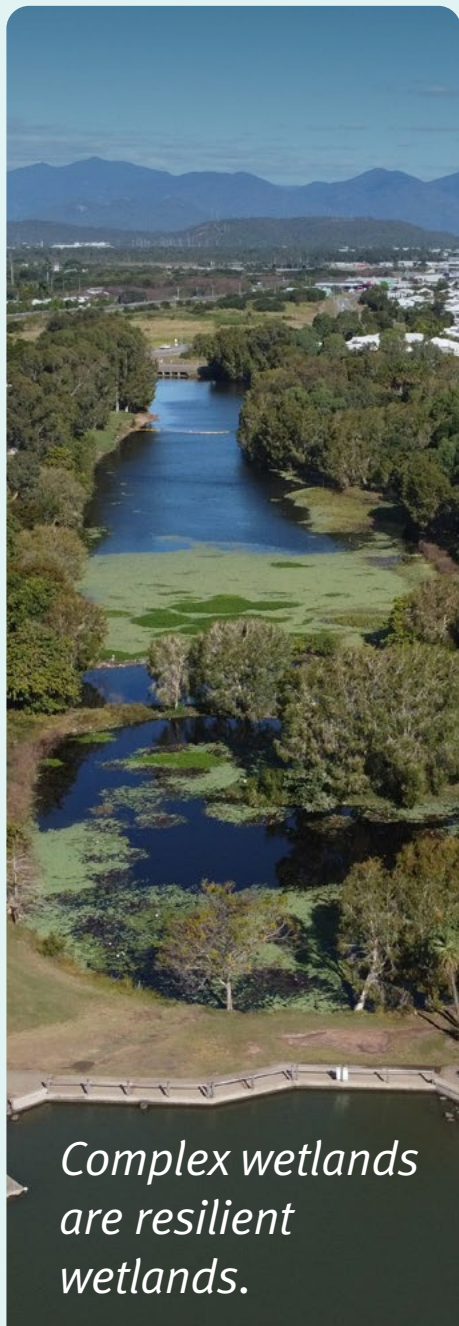
We know the wetland can smell at times, we can quickly address this if it's reported to us

We know that the wetland can smell at times, particularly during warmer weather and still conditions. The wetland is a living and biologically active ecosystem and odour is a normal function of the nutrient cycle (breaking down organic matter) in a healthy wetland. Exposed muddy banks can also create odour. If odour needs to be treated, Council can use the power of microbes to reduce odour in an organic and sustainable way.

Main image: Northern Sediment Basin

Images below: the jetty showing water levels in wet and dry seasons





*Complex wetlands
are resilient
wetlands.*

The sediment basins really know how to take out the trash and are the heroes of your wetland

The sediment basins stand guard at the stormwater inlets and capture nutrient runoff (grass clippings, dog droppings, sediments, fertilisers, litter and other pollutants) from surrounding residential properties before they enter the wetland.

These guardians are deep and allow water to slow down and the sediment to drop out. When this sediment builds up Council will remove it from the basins. Trash racks have been installed to remove litter prior to entering the system. The basins are designed with rock pads and other access for machinery to make maintenance easier.

Because of the high level of nutrients captured by the sediment basins, they are regularly seen with floating weeds in them, this is expected and shows they are doing their job of keeping the nutrients out of the wetland. When aquatic plants cover the entire surface of the water, Council will use machinery to remove them.

Images:

Left: Aerial view of the Northern Sediment Basins and Fairfield Wetland

Top right: No mow buffer

Bottom right: Fairfield Wetland, legend below.

- Lake 1 saltwater
- Freshwater wetland
- Northern sediment basin
- Southern sediment basin & Harvest and reuse zone

Ways Council helps the wetland thrive:

- We keep a “no mow” buffer of longer grass and vegetation around the edges of the wetland to filter litter, grass clippings and other pollutants.
- The native vegetation strips and large paperbark trees we plant provide shading to keep the water cool. They also provide native animal habitat and refuge from predators (domestic cats etc.).
- We reduce herbicide use as much as possible to protect the health of the plants, animals and the wetland. We only remove exotic aquatic weeds and try to use machines where possible rather than poison.
- We leave native floating aquatic vegetation on the wetland because it is essential for a healthy wetland – providing shade, nutrient cycling, and food for wetland wildlife.



Sometimes when you have a party, uninvited guests show up

Lurking amongst our native floating plants, some unwelcome visitors can show up. It's only when they start to take over that we act to show them the door and reduce their impact.

Using machinery such as excavators to manually pull out the weeds is the preferred method of removal by Council. This removes the nutrients (inputs from surrounding urban areas) out of the system all together, providing ecologically sound management.

Manual weed removal can only occur in the dry season because it is not safe to

use heavy machinery on the muddy banks in the wet season.

Chemical poisoning of the weeds with herbicide may seem easy yet doesn't address the problem. Poisoned weeds sink to the bottom of the wetland and rot. This decomposing weed will cause odours and provide more nutrients into the system for more weeds to grow. Excess nutrients can increase the likelihood of algal blooms and fish kills.

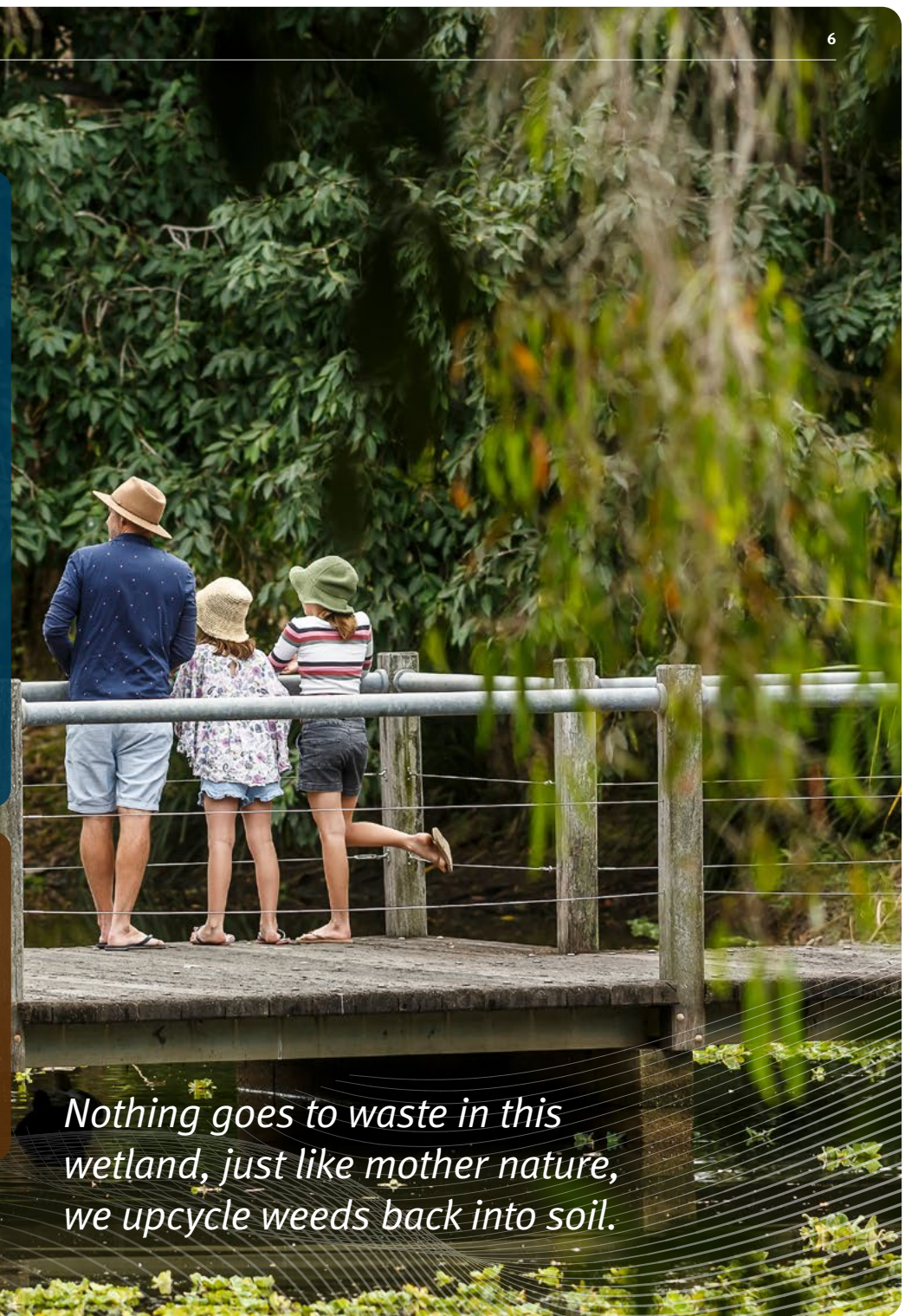
Main image: Pedestrian bridge at the Southern Sediment Basin

Weeds to healthy soils

In an innovative process, removed vegetation is reused to create beneficial products. This can either be used as an ingredient to produce topsoil or reused in the garden beds surrounding the wetland as mulch. Not only are we using waste to

make a valuable resource, we are reducing costs for residents such as transport and dumping fees for landfill. Weeds to healthy soil furthers our goals of waste reduction, emissions reduction, and circular economy principles.

Nothing goes to waste in this wetland, just like mother nature, we upcycle weeds back into soil.



Your neighbourhood wetland is monitored, well-managed and thriving

Because of its outstanding conservation values, the wetland and surrounds are managed as a natural area and not as a manicured park.

Monitoring and management

Council undertakes a range of programs to keep the waterways healthy:

Regular Inspections

Environmental staff routinely look for signs of weeds, odours, pollution, algal blooms, sick birds and fish. Weekly water sampling and analysis undertaken is at council's laboratory.

Incident response

If water quality deteriorates, Council implements procedures to respond to algal blooms, sick birds or fish kills. Actions can include inoculating with biological catalysts, deploying aerator pumps, erecting warning signs and releasing media statements.

Community education

Informative signs about wetland birds, feeding ducks to how the floating wetland works are sprinkled across the walking and viewing areas. Creekwatch groups get locals involved in environmental monitoring and events like Tilapia fishing competitions etc.

Groundwater monitoring

Council installed a groundwater monitoring bore with the aim to better understand the relationship between the wetland and groundwater levels in the wet and dry season.

Water quality improvement

A floating wetland has been installed in the southern sediment basin. This floating platform mimics natural wetland processes to biologically filter the water and is a demonstration of a low-cost and innovative method to improve water quality.

Removal of floating exotic weed, and sediment build up

All natural wetlands have floating aquatic plants. Council doesn't remove native aquatic plants from a natural wetland area. However, Council does remove exotic weeds if they start to dominate a system.

Inserts: examples of signage around the wetland

Main Image: sign about common birds in the wetland



Maintaining the health of our wetland

Council have developed a comprehensive Fairfield Freshwater (School Lagoon) Wetland Environmental Management Plan (EMP). The plan provides a practical and cost-effective approach for natural areas, sediment basins and wetland monitoring and maintenance to ensure a healthy wetland. Importantly, the plan is adapted to suit the unique Dry Tropics environment of Townsville.

Can you help too?

Yes you can by acting in the following ways:

- When it rains, fertiliser, grass clippings and herbicides used on your yards can be washed into gutters and ends up in the wetland. To reduce your impact you can:
 - Reduce fertiliser use and use compost.
 - Keep grass clippings out of the gutters as grass clippings will add unwanted nutrients into the wetland.
- When you can, opt for grasses, shrubs, and trees over cement, as they allow for warm water from impervious surfaces like roofs and driveways to infiltrate into the soil rather than flowing into, and heating up the wetland.
- Reduce chemical use, its healthier for you and your family.
- Landscape with native plants, they don't need your help (water or fertiliser), they were born to grow here.
- If you see sick or dead fish or birds, you can help by calling the Council Call Centre 134 810.
- Feeding the birds with bread can make them sick and adds nutrients to the water. If you do feed the birds, a tiny amount of oats, chopped lettuce or a few tasty meal worms from the pet store is the best.
- Get involved, join your local Creekwatch or conservation group to learn more about your local area.
- You can help reduce your cat's impact on native species by keeping your pet indoors or contained. The RSPCA guidance is that cats are healthier and will live longer if they are kept at home and away from traffic, snake bites and fights with other cats and dogs. It is estimated that pet cats can kill up to 230 million native Australian birds, reptiles and mammals each year.

Townsville City Council acknowledges the Wulgurukaba and Yunbenun, Bindal, Gugu Badhun and Nywaigi as the Traditional Owners of this land. We pay our respects to their cultures, their ancestors, and their Elders – past and present – and all future generations.

For more information

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