

Protecting the Cleanest Waterway in Sydney – A Community’s Story

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Abstract

Maroota is a small ridgetop community located 60 km northwest of Sydney. From Maroota, three watersheds flow to the Hawkesbury River. The Maroota sandmass generates freshwater springs, which support abundant biodiversity downstream. One of the three major surface water catchments emanating from Maroota is that of Little Cattai Creek. The macroinvertebrate diversity of this waterway has led to its description as the cleanest waterway in Sydney. Little Cattai Creek bisects Maroota Forest (4250 hectares) with the highest faunal species diversity per hectare of any reserve in the Sydney Region. Rare and endangered fauna species include the koala, platypus, spotted tailed quoll, and yellow-bellied glider. Little Cattai Creek flows to the Broadwater wetlands, significant in the Hawkesbury Nepean Catchment by providing habitat for protected migratory birds. Threats to this near pristine catchment include: sandmining; spring water depletion at the headwaters; nutrient runoff; and the potential for development and subdivision. Over the past six years our local community has initiated projects facilitating the education of both authorities and the community about protecting the Little Cattai Creek catchment. These projects have strengthened the community’s appreciation of, and need to protect, this remaining, biodiverse and spring - fed catchment “Sydney’s Kakadu”.

Keywords

Biodiversity; Little Cattai Creek; macroinvertebrates; spring-fed; wetlands

INTRODUCTION

NSW National Parks and Wildlife Service carried out Stage 1 of the Sydney Urban Bushland Biodiversity Survey in 1997. The aim of the study was to research, survey and document the biodiversity of Western Sydney with an emphasis on threatened species, communities and habitats, with the ultimate aim being to conserve this biodiversity. Thus species surveys of birds, mammals, flowering plants and some aquatic habitats were undertaken to “to provide sufficient information to deal with urgent conservation problems” (NSW National Parks and Wildlife Service, 1997) rather than to try to carry out a comprehensive survey of biodiversity.

Researchers found a little known stream feeding the Hawkesbury River that was in a pristine ecological state. This waterway, known as Little Cattai Creek contained more than 1000 species of marine invertebrates including freshwater crayfish. The high

numbers and sheer diversity of species found indicated that Little Cattai Creek had very high water quality. The macroinvertebrate diversity of this waterway included species not found in any other waterway in Sydney and led to its description as the cleanest waterway in Sydney. It amused local community members that in the press, this item was newsworthy as “Cleanest river found by accident” (Benson, 1997). If the researchers had only spoken to local community members, we could have told them about this pristine waterway! The “by accident” suggests ignoring community local knowledge when carrying out such studies is to the study’s detriment.

A NEAR PRISTINE SPRING-FED CATCHMENT

The Maroota Sandmass

Maroota is a small ridgetop rural community located 60 km northwest of Sydney, and 10 km south of Wisemans Ferry. From Maroota, three watersheds flow to the Hawkesbury River. The area is unique environmentally: a sandmass from an ancient river paleochannel is found at the top of the ridge and intrinsically associated with this Tertiary Sand deposit is an aquifer generating freshwater springs (Etheridge, 1980). These springs provide continuous water flow to local creeks, thereby supporting abundant biodiversity downstream in all directions from Maroota. Some of this biodiversity appears to be unique to Maroota. For example, there is a Maroota Sands Swamp Forest located at an elevation of 150 Australian Height Datum (AHD) and dominated by *Eucalyptus robusta* (more commonly found on river flats), which is listed as an Endangered Ecological Community under the Threatened Species Act (Coad, 1999).

Maroota Forest

One of the three major surface water catchments emanating from the Maroota tertiary sand deposit is that of Little Cattai Creek (the cleanest waterway in Sydney). Little Cattai Creek flows to the Hawkesbury River through Maroota Forest - its environmental values are well documented: the forest, covering 4 250 hectares has the highest faunal species diversity of any reserve or National Park in the Sydney Region, except the Blue Mountains National Park which covers around 160 000 hectares. The area contains many rugged and deep sandstone gullies, with pockets of sub tropical rainforest and shale sandstone transition forests. Also extensive evidence of the former indigenous inhabitants of the area can be found in examples of rock art in the forest. Rare and endangered fauna species noted in the Maroota Forest and surrounding areas include the koala, platypus, spotted tailed quoll, yellow-bellied glider, common bent wing bat, powerful, masked and sooty owls, and glossy black cockatoos, with the habitats of these species thought to be dependent on upstream spring flows and a wildlife corridor adjoining the forest, Marramarra National Park, to the east.

Broadwater Wetlands

Before reaching the Hawkesbury River, the lower section of Little Cattai Creek forms an extensive wetland area known as the Broadwater Swamp. It is one of the largest fresh water wetlands in the Hawkesbury Nepean catchment, covering approximately 80 hectares during wet periods. This wetland provides diverse faunal habitats such as deep lagoons, narrow pools, marshy flats, isolated ponds and adjacent forested slopes. A number of threatened faunal species have been identified in Broadwater Wetlands

such as the Giant Burrowing Frog, the Red Crowned Toadlet and the Black Bittern. The area is also a significant habitat for water birds including Latham's or the Japanese Snipe, which is protected under the Japan (and China) Australia Migratory Bird Agreements (JAMBA and CAMBA). This wetland is currently divided into two zones: one is listed under Environmental Protection 7(a) (wetlands) affording some biodiversity protection, whilst the other part is under Rural 1(b) zoning. This zoning means the area may be subdivided to 10-hectare allotments, with a variety of permissible land uses including agriculture and nurseries.

THREATS TO THE CLEANEST WATERWAY

Reduced Springwater Flows

Ironically, the very geology of Tertiary Maroota Sand that generates the spring water aquifer may be a potential threat to its sustainability. At the head of the Little Cattai Creek catchment, the deposit of Tertiary Sand has been found to be of a size significant to provide a worthwhile extractive resource (approximately 21 million tonnes) and has been delineated for sand extraction by NSW State Government. Sandmining commenced in the early 1990s and has scaled up significantly over the last six years. Anecdotal evidence from Maroota community members suggest that spring flows have continued from Maroota even during periods of significant drought. However, in the mid 1990s some community members, dependant on spring water for orchards and market gardens, became concerned that the water flow from the springs was declining. They questioned whether this was related to the increase in extractive industry occurring nearby. Reduced spring water flows would of course impact on the groundwater dependant ecosystems downstream of Maroota, including those related to Little Cattai Creek and the Broadwater Swamp.

Agriculture

Agriculture at Maroota, the headwaters of Little Cattai Creek, is another potential threat to the waterway. Spring water from Maroota is used to irrigate extensive green leaf crops such as lettuce and cabbage, diverting water otherwise contributing environmental flows to Little Cattai Creek. On the south east side of the catchment in Glenorie particularly, fertilisers and nutrient runoff are contributing to water quality problems which is facilitating Crofton Weed growth in tributaries leading into the Little Cattai Creek catchment.

Potential for Development of the Catchment

Little Cattai Creek is pristine because the catchment of Maroota Forest is principally undisturbed. The Maroota State Forest was dedicated in 1961 and selectively logged until 1975. At that time the land was converted from State Forest to Crown Land, to facilitate the area becoming a National Park. However, NSW National Parks and Wildlife Service did not move quickly enough. A claim was lodged over the land in 1989 and in 2001 the Deerubbin Local Aboriginal Land Council was awarded private freehold ownership of Maroota Forest under the Aboriginal Land Rights Act 1983 (NSW). This act allowed for a process of claiming "Crown Lands, not including lands needed, or likely to be needed, for an essential public purpose" (NSW National Parks and Wildlife Service, 1997). This now means that Maroota Forest, which is currently zoned Rural 1(b), could potentially be developed by subdivision into 10-hectare properties and sold.

COMMUNITY ACTIONS

Streamwatch

Over the past six years, local community groups have initiated projects and activities to facilitate the education of both authorities and the local community about protecting the spring water resource at Maroota, the primary source of Little Cattai Creek and its associated wetlands, as well as conservation of the Maroota biodiversity. Two local groups from Maroota and Glenorie have been actively involved in Streamwatch. This way the community is empowered to keep a monitoring brief on the water quality of Little Cattai Creek, and tributaries leading to it. Both groups work with local primary schoolchildren to educate them about protecting this unique area we inhabit. The group working from Glenorie currently has funding to target Crofton Weed removal from the Little Cattai Creek catchment by using Streamwatch to target nutrient run-off from the Glenorie end of the catchment.

Community Education: Information Forums and Field Days

Both these local community groups have been funded through the Federal Government's Natural Heritage Trust to deliver a substantial community education strategy about the local area. Forums and information days have been held to educate the local community and relevant authorities about the pristine springs, spring-fed waterways and their associated biodiversity. Articles are written regularly for our local community monthly newspaper. These projects have strengthened both the community and the authorities' appreciation of, and need to protect, this remaining, biodiverse and spring - fed catchment in the Sydney basin.

Community call for a new Regional Environmental Plan

In response to the successful land claim by the local Deerubbin Local Aboriginal Land Council, a Maroota Forest Conservation Committee was set up to facilitate recognition of the need for conservation of this last relatively untouched parcel of land. A consortium of community members from the local groups prepared a submission to the then NSW Planning Department to request that the unique cultural (both indigenous and colonial) and environmental attributes of the Maroota area be protected through preparation of a new Regional Environmental Plan. Very little response has been forthcoming from the Planning Department (now Department of Planning, Infrastructure and Natural Resources) about this proposal.

In addition the Deerubbin Local Aboriginal Land Council has not voiced its intentions in regard to the Maroota Forest parcel of land. If it were to be subdivided into 10 hectare allotments, not only would a resource of biodiversity which should be preserved for future generations be lost, but the cleanest waterway, Little Cattai Creek would inevitably suffer from the impacts of development. This has occurred in other suburban catchments around Sydney. We are very happy for the land to be under Aboriginal ownership if it is to be preserved!

Mitigating Impacts of Sandmining on Groundwater

Community pressure from concern that sandmining would lead to depletion of Maroota groundwater resource led to the Department of Water Resources commencing a Groundwater Study at Maroota. This has led to the installation of three

groundwater piezometers in the late 1990s to monitor water levels in both the Maroota Sands Shallow aquifer and the deeper Hawkesbury Sandstone Aquifer. The data has revealed the importance of the Maroota Sands Shallow Aquifer for environmental flows to Little Cattai Creek and other surface water catchments, with their source at Maroota, the top of the catchment. The data also suggests that the Sand Aquifer is currently at the limit of what can be abstracted, if the environment is still to receive adequate flows as well (Russell, 2001). The community must now press for completion of the final stage of this Study, namely, for the government authority to proceed with development of a groundwater management plan to ensure use for sandmining and agriculture does not deplete the aquifer further. In the meantime, sand extraction is allowed only to a depth of 2 metres above the wet weather water table.

Following much community pressure, the Department of Planning, Infrastructure and Natural Resources has recently agreed to establishment of a committee with representation from all local extractive industry operators, Councils, and five community members to oversee the cumulative impacts of extractive industry on Maroota. The objective of this Committee is to minimise, among other factors, the environmental impacts of sand extraction, such as the potential for disturbance to the Maroota groundwater aquifer. It is hoped that this will facilitate better protection of the source of Little Cattai Creek.

CONCLUSION

We are fortunate to have a highly motivated and active community in our area working towards protection of the biodiversity at Maroota. However there is only so far a community can go on its own. In our area we would like to see more than just “lip service” paid to biodiversity conservation by all levels of government. The Urban Bushland Biodiversity Survey highlighted that in Sydney, the Maroota area is a key location of biodiversity. Locals refer to this area as “Sydney’s Kakadu”.

The first recommendation of Western Sydney Biodiversity Study was that the Survey itself should be recognised as an important indicator of land suitability and used as such by Councils. The second recommendation stated that “through appropriate zoning, areas of high biodiversity should be protected from inappropriate development and development sympathetic to the protection and maintenance of biodiversity values (be) permitted. This could include protection of identified corridor area or significant habitat” (NSW National Parks and Wildlife, 1997). Further the study stated that biodiverse aquatic ecosystems such as that of Little Cattai Creek “should be priorities for appropriate protection and management”.

The local community believes that the cleanest waterway in Sydney and its catchment in Maroota Forest is significant habitat and should be conserved as natural heritage for Sydney’s future, especially given the extensive urban development currently occurring in Sydney’s north west sector. Local Government, with support from State and Federal Government should ensure appropriate zoning allows this to happen as a matter of urgency.

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