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Parafield Gardens R-7 School  
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Dear Raelene, Deanna and the year 6/7 students

Thankyou for your letter showing interest in the Salisbury Wetlands and the impact on the local environment. Your research and contact with the City of Salisbury is a great example of student voice in action, and the learning gained from the exercise has provided the students with a great local context.

This letter will provide some information about the City of Salisbury wetlands and will hopefully clarify the questions the students have put forward in their reports.

Salisbury has over 50 wetlands and water body's which have provided significant economic, social and environmental benefits to the local community and the wider region. Some of the main benefits wetlands provide:

- Provide flood protection for the surrounding suburbs
- Restore habitat and increase biodiversity
- Provide natural filtering and cleansing of storm water
- Prevents a large percentage of litter and debris travelling out to our oceans
- Allows us to use the cleansed water (known as Salisbury Water) to keep the City of Salisbury 'green'.
- Create attractive landscape features
- Provide opportunities for environmental education and awareness

Constructed wetlands are designed and built in a way to maximize the multiple benefits as mentioned above. Depending on the wetlands purpose and space available, built elements of a wetland may include:

- Trash racks – which collect large floating pieces of litter and debris
- Gross pollutant traps – which allow solids suspended in the water to settle out
- Sedimentation ponds – which slow down the water and allow sediments to settle out of the water
- Reed beds – which filter the slow moving water

The wetland which you attended on your field trip located off Sanctuary Drive at Mawson Lakes is an ephemeral wetland; which means it is only wet seasonally and is meant to dry out during summer. As we are now in the summer period, the wetland is commencing the natural drying out process. During this period, the water quality properties are quite different to that during the winter months where there is a constant flow of water. The South Australian Reclaimed Water Guidelines recommend that the optimal pH level for protection of aquatic ecosystems is 6.5-9.0 unless otherwise stated. As shown in the student's reports, the pH level can vary depending on the location the water sample is taken from in the waterbody.

It is important to note that pH is only one measure of water quality, and when monitoring a site you should ideally examine other measures such as salinity, temperature, turbidity, phosphate and nitrate levels in order to gain a better picture of the overall health of a waterway.

The City of Salisbury has a strict regular water sampling schedule that needs to be adhered to. The results are monitored regularly at varying sites throughout the City of Salisbury and are submitted to various government agencies such as the Environmental Protection Agency (EPA) and the Department of Water and Natural

Resources (DEWNR). The current water sampling schedule is maintained to ensure the water and natural environment are protected, thus the health and safety of the local community.

Throughout the students' reports and photos, there is algae growth in the wetland. It is important to note that not all algae growth is bad and often it has a purpose in the wetland environments. There is an algae known as 'Green Guts' (because it is bright green and looks like strings of guts in the water) that might not look overly attractive to humans, but it is harmless and actually helps to take nutrients out of the water. Generally speaking, we see more algae in wetland environments after rainfall (as there is more water coming into the waterways from the urban environment carrying pollutants such as phosphates and nitrates) followed by warm to hot days. The combination of sunlight and nutrients provide the perfect environment for the growth of algae. Did you know there are at least 12,000 marine, freshwater and terrestrial species of algae in Australia!

There was a suggestion that some of the reeds at the wetland were dead. The reeds have a natural growth cycle where some of the plant dies off allowing it to reshoot again with new green growth. This is also a part of the natural drying cycle of the wetlands and is a sign that the wetlands are in fact healthy and vibrant. It was also mentioned that wildlife was not seen during the students' field trip; this does not mean that there wasn't any wildlife in the area. Birds are mostly active in the early hours of the morning and tend to choose areas where there is limited or no human interaction. There are lots of tiny water insects called macroinvertebrates that live in all freshwater environments such as the wetlands. Some of these insects are very tolerant to pollution, so even in an 'unhealthy' water environment, you will still find life. Other animals such as rats, snakes and frogs have been seen in the past. The animals are sensitive to noise and probably were hiding during your visit.

Many of the students also noted that rubbish could be seen in and around the wetlands site. The wetlands are a means of preventing rubbish from travelling out to sea, protecting our marine environments; this means that they are actually fulfilling one of their intended jobs. Another reason for constructing the wetlands is so that the local community can enjoy the area. If high fences were constructed around the area, the local community would be prevented from enjoying these areas. It is the responsibility of those people visiting these sites to remove any litter they bring with them. City of Salisbury staff and volunteers are required to pick up the rubbish from these areas throughout the year. However, if a significant amount of rubbish at the site is identifiable from the local fast food outlet, maybe the students could contact these outlets informing them of the issue and suggest possible solutions.

If you'd like to learn more about catchments, stormwater, wetlands and environmental monitoring, please visit <http://www.naturalresources.sa.gov.au/adelaidemtloftyranges/education> and check out the For Educators and For Students pages.

Should you need any further information or clarification on any information included in this letter, please contact me.

Kind Regards



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