

ANNUAL NUTRIENT SURVEY for Local Government Authorities

2023 Shire of Mundaring Nutrient Management Score Card

The Swan and Canning River systems, and many wetlands, are suffering from regular, and sometimes toxic, algal blooms. These blooms occur due to excessive inputs of nutrients, particularly phosphorus and nitrogen, combined with low water flows and warm temperatures. Local authorities are responsible for nutrient use and management on turfed areas and in reserves, in drainage systems and in local planning decisions and thus have the opportunity to lead the community by setting examples in best practice.

Each year Local Government Authorities (LGAs) in Perth are surveyed on their nutrient practices by the Phosphorus Awareness Project of the South East Regional Centre for Urban Landcare (SERCUL). The survey is broken up into different sections including nutrient monitoring, fertiliser applications to foreshore areas, nutrient management, water quality monitoring, development control and nutrient education. The results from the questions asked in the survey have been used to provide a Score Card for each LGA that responded and clearly show how the LGA is performing and where and how improvements can be made. LGAs should also refer to the Annual Nutrient Survey for Local Government Authorities Results 2023 report (www.sercul.org.au/fertilisewise) for further recommendations on how to implement nutrient Best Management Practices (BMPs).

Please note that not all of the questions asked in the survey were used to determine the overall best management practice score. Any additional information about nutrient practices provided by an LGA is summarised at the end of this scorecard.

2023 Overall Best Management Practice Score – 80% ABOVE AVERAGE

The Shire of Mundaring just missed out on a score of excelling for implementing nutrient Best Management Practices in 2022/23. It should be noted that the soil types present in the Shire of Mundaring mean they are far less likely to leach nutrients than those on the Swan Coastal Plain (see comments under Additional Information). Further improvements can be made in the areas of nutrient monitoring, fertiliser applications, nutrient management and water quality monitoring.

RESPONSE KEY:

BMP has been achieved BMP has NOT been achieved
 Not Applicable Response not assessed

BEST MANAGEMENT PRACTICE (BMP) KEY:

Excelling Above Average Average
 Below Average Unsatisfactory

NUTRIENT MONITORING

QUESTION	RESPONSE	SECTION BMP
Were regular soil nutrient tests, soil moisture tests &/or leaf tissue analyses conducted in any grass/turf areas?	YES	ABOVE AVERAGE
Was analysis conducted by a lab affiliated with ASPAC?	YES	
Was plant available phosphorus in the soil measured using an appropriate test?	NO RESPONSE	
Were rates of phosphorus determined by soil testing and Phosphorus Retention Index (PRI) results?	YES	

The Shire did not provide a response to the question of which method was used to measure plant available phosphorus in the soil and this affected their score. An appropriate test would be the Colwell, Olsen, Bray or MLSN (Mehlich III). Soil tests and leaf tissue analysis were conducted in sports fields and irrigated parks, which were both fertilised and irrigated. It is recommended that regular moisture tests be undertaken in areas that are fertilised and irrigated. The Shire reported having no foreshore areas.

FORESHORE FERTILISER APPLICATIONS

QUESTION	RESPONSE	SECTION BMP
Are there grassed/turfed foreshore areas within the LGA?	NO	
Was fertiliser added to grassed/turfed foreshore reserves?	N/A	
Did the fertiliser contain phosphorus?	N/A	
Was it a controlled release solid fertiliser or a liquid fertiliser applied to foliage?	N/A	
Was there a buffer zone around waterbodies in which no fertiliser was applied?	N/A	
Was any nutrient testing completed of foreshore areas?	N/A	

The Shire reported having no foreshore areas.

General Fertiliser Recommendations:

It is recommended that fertiliser only be applied in spring and autumn as summer fertilising encourages the overuse of water and turf may grow excessively, while fertiliser applied during winter can be washed into stormwater drains or leached into groundwater. Many grass species are also dormant or semi-dormant in winter. Employees involved in turf management would benefit from attending SERCUL's Fertilise Wise Fertiliser Training in 2024.

NUTRIENT MANAGEMENT

QUESTION	RESPONSE	SECTION BMP
Were structural BMPs in place to reduce nutrients entering waterbodies?	YES	EXCELLING
Were non-structural measures in place to prevent nutrients from grass clippings entering waterbodies directly or via stormwater drains?	YES	
Were there deciduous trees in parks and streetscapes?	YES	
Were non-structural measures in place to prevent nutrients from deciduous leaves entering waterbodies directly or via stormwater drains?	YES	
Were non-structural measures in place to prevent nutrients from sediment entering waterbodies directly or via stormwater drains?	YES	
Was a Nutrient and Irrigation Management Plan (NIMP) implemented for streetscapes?	NO	
Was there a policy to use local native plants as the first choice in public (LGA) and private (developers) landscaping?	YES	

It is recommended that no further deciduous trees be planted on road verges or near water bodies. A NIMP should be implemented for streetscapes.

WATER QUALITY MONITORING

QUESTION	RESPONSE	SECTION BMP
Were wetlands regularly monitored for nutrient levels?	YES	BELOW AVERAGE
Were stormwater drains regularly monitored for nutrient levels?	NO	
Were compensating basins regularly monitored for nutrient levels?	NO	

The Shire monitored nutrient levels in wetlands, but did not report the results to the local community. It is recommended that the City implement a monitoring program for stormwater drains and compensating basins and report the results to the local community. SERCULs Water Quality Monitoring Team can assist LGAs with undertaking this work and can be contacted on 9458 5664.

DEVELOPMENT CONTROL

QUESTION	RESPONSE	SECTION BMP
Were there provisions in the Town Planning Scheme or Planning Policies to enforce environmental conditions on development?	YES	EXCELLING
Did the LGA impose conditions on development which included Nutrient and Irrigation Management Plans (NIMPs)?	YES	
Did the LGA have mechanisms in place to regulate sediment management?	YES	

It is recommended that the Shire continue to implement their current practices, including monitoring developments for compliance. If developers are found not to be in compliance they should be prosecuted.

NUTRIENT EDUCATION

QUESTION	RESPONSE	SECTION BMP
Were dog poo bins and bags provided in parks and foreshore reserves?	YES	EXCELLING
Were measures taken to educate the public about not feeding bread to waterbirds in foreshore reserves and parks?	YES	
Were ratepayers provided with advice on best practice in fertiliser management according to soil type?	YES	
Was education provided about nutrient sources to waterways?	YES	

It is recommended that the Shire continue to implement their current practices. In addition to what is currently being undertaken, SERCUL has relevant information on its website that can be linked to and can be engaged to deliver presentations about nutrients and their impact on waterways to schools, business and community groups through its Phosphorus Awareness Project. For more information on this education program and how it can assist the Shire with nutrient education contact Natasha Bowden on 9458 5664.

ADDITIONAL INFORMATION PROVIDED

Development and council adoption of Watercourse Hierarchy Strategy. The strategy explains that the geomorphology of the Shire is entirely different to that of the Swan Coastal Plain (SCP). The laterite soils overlying granite have perennial and intermittent drainage compared to the shallow groundwater and nutrient-leaching soils of the SCP. Stormwater management requires detention systems to slow stormwater runoff and reduce peak velocities which can lead to erosion rather than the infiltration and bioretention systems used to treat stormwater on the SCP. The highly phosphorus-fixing soils in the hills bind phosphorus and as such phosphorus levels in run-off from Mundaring catchments are currently within DBCA acceptable short and long-term targets. Consequently, water quantity and velocity management are more significant than water quality (nutrient) management.