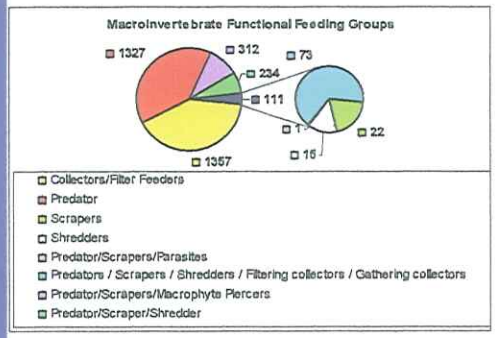
change in ecology of the wetland. The composition of these groups at Swan Lake are displayed in the below graph.



Collectors / Filter Feeders and Predators appear to be the most dominant groups yet the groups appear to be fairly evenly represented.

Conclusion

Swan Lake is a brackish to moderately saline wetland receiving water from surface runoff, sub surface flow and via the three drainage lines entering from the north. Despite the lake being perched above the groundwater, saline water enters the lake through sub-surface flow and seeps along the water courses. Nutrient levels are usually reasonably low although the available forms of nitrogen have ben high on occasions. The main consideration for Swan Lake is the *Microcystis flos-aquae* blooms that appear to occur over summer months. This is of particular concern as the lake is a popular recreational and skiing lake and contact with toxic algae should be avoided.

Some knowledge gaps were identified during the investigation, monitoring and data analysis for this wetland which should be addressed to improve understanding of the water quality and biodiversity and to detect changes over time. The monitoring period was relatively short and some effects of previous and current land use change and management may not yet be evident.

Macroinvertebrates would need to be identified to family or species level to allow more detailed analysis of ecological condition and relationship to other wetland characteristics. The hydrology of the wetland and its catchment is not fully understood or monitored, particularly the interaction between groundwater and surface water. A future monitoring program should be developed to address these issues.

Lisa Braun filtering water for chlorophyll a and nutrients

Acknowledgements

The Department of Water would like to sincerely thank and acknowledge the following people for their assistance and contribution toward the South Coast Wetland Monitoring Program and production of this report.

- Ruhi Ferdowsian (Department of Agriculture and Food, Albany) for providing knowledge of the hydrogeology associated with Swan Lake.
- Ania Lorenz, Sherrie Randall, Kevin Hopkinson, and Albany Department of Water team who conducted the monitoring.
- Kevin Hopkinson, Naomi Arrowsmith, Andrew Maughan and others for their support and editing assistance.
- Sherrie Randall and Tracy Calvert for data analysis and report compilation.

For further information please contact Tracy Calvert at the Department of Water Albany (08) 9842 5760.

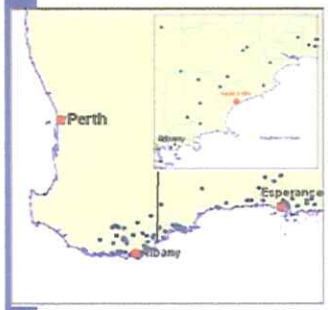
This report card summarises the Department of Water's current state of knowledge of the physical, chemical and biological characteristics of Swan Lake based on the knowledge gained from investigation and monitoring conducted by the Department of Water through the South Coast Wetland Monitoring Program.

Accompanying this document are appendices that provide more detailed information about the wetland monitoring program, terminology of wetland classification, parameters monitored, methodology and the ANZECC&ARMCANZ guidelines used in this report.

Funding for this program has been provided through South Coast Natural Resource Management Inc. - supported by the Australian Government and the Government of Western Australia.

About Swan Lake

	GPS Location Coordinates		
Wetland Suite	Easting	Northing	MGA Zone
Swan Lake Suite	634795	6156816	50



Swan Lake is located near the coast approximately 73km east of Albany in Western Australia within the catchment of Mullocullop Creek. The wetland is at approximately 15m AHD (Australian Height Datum) and the area receives an annual average rainfall of 645mm.

Swan Lake is located on Crown Reserve and a number of private properties within a catchment of approximately 11km^2. The Lake lies within unfenced wetland vegetation buffer zone that extends approximately 0-750m from the wetland edge. There is public access to the lake which is popular for recreation and skiing.

Vegetation in the upper storey consists of *Eucalyptus occidentalis* (Yate), *Agonis* flexuosa, *Melaleuca cuticularis* (saltwater paperbark) in the mid storey and sparse *Baumea articulata* in the understorey.

Swan Lake

Riparian Vegetation around Swan Lake

Department of Water
Government of Western Australia

SOUTHCOAST NATURAL RESOURCE MANAGEMENT

Australian Government