

Healthy Soils Healthy Rivers

Working with farmers in the Swan and Avon regions on fertiliser use efficiencies



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The three-year program focuses on minimising the impact of fertiliser use on our river systems by working with farmers and industry to maximise nutrient-use efficiency within the catchment.

The approach

The program is delivered as a partnership between Perth NRM, Wheatbelt NRM, the Department of Parks and Wildlife and regional farming groups. It takes a strategic approach to working with land managers in the sub-catchments of the Swan and Avon regions where nutrient movement from agricultural land to our rivers systems, has been identified as an issue.

The benefits

- **Providing farmers with the support they need to improve production efficiencies whilst reducing fertiliser inputs.**
- **In turn, this improves profits for farmers and reduces the loss of nutrients to water ways in the region.**

With a strong, collaborative approach we have been able to draw on a wide range of expertise to develop and implement a strategic program.

Working with farmers in irrigated agriculture

In the Swan Region, the program utilises independent, industry appropriate agronomists to:

- conduct informal on-site interviews with land managers to determine current fertiliser and irrigation management practices;
- demonstrate the correct methodology for taking soil, leaf and irrigation water samples and then take these samples to a lab for analysis;
- develop a report and recommendations for fertiliser management specific to the land and crop type
- conduct a follow-up visit to go through the report with the land manager (includes discussion on lab results); and
- conduct presentations at industry workshops to extend information on leading nutrient management practices and the benchmarking results from the informal interviews (kept anonymous) to provide opportunity for comparative analysis.

Progress and achievements

By providing a flexible engagement and implementation process that meets the needs of farmers from livestock, orchards, viticulture, vegetable and the grain sectors we have been able to involve more than 110 farming entities in the program.

Feedback from land managers has been very positive. Growers such as Brett Delsimone, an orchardist and representative for the Hills Orchard Improvement Group, have reduced Nitrogen use by approximately 35%. **According to Brett, this program has helped him to better match fertiliser applications to crop needs, consequently reducing the pruning costs associated with excess vigour. Adopting improved fertiliser management practices also minimises nitrogen leaching into the groundwater and nitrous oxide (GHG) emissions.**

Working with farmers in the grain sector

Studies suggest that nitrogen and phosphorous use efficiency in the Avon region can be improved from 41% and 48% to 56% and 75% respectively in wheat and sheep farming systems. If all farmers in the Avon Basin were to adopt improved nutrient management practices, it has been suggested that nitrogen loads in the Swan-Avon River would decrease by 153t/yr and phosphorous loads by 2.4 t/yr.

Wheatbelt NRM, with support from DAFWA and independent agronomists, is working with wheat and sheep farms over two growing seasons using five key steps to guide on-farm nutrient management decision making, including:

- Paddock analysis and planning: paddocks are mapping into soil zones using available data, growers' knowledge and paddock visual assessment.
- Soils sampled by zone and to depth: soil sampling in the focus paddock is compared to industry standards for critical ranges and mapped using traffic lighting
- Crop tissue to testing: Tissue testing will be used to assess limiting factors to the crop
- Nutrient Balance Assessment: a comparison of farm inputs and outputs is used to determine the efficiency of the fertiliser budget in the production systems
- Discussion groups with participating landholders and industry experts provide opportunity for farmers to identify approaches to improve NUE on their farm.



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