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HNRRP e-news

This issue

Welcome

The Hawkesbury Nepean River Recovery Program (HNRRP) aims to help improve the health of the river system by reducing the amount of nutrients entering the river system and making more water available for environmental flows.

In this issue of HNRRP e-news we explore one of these important objectives, looking at how the HNRRP is working to prevent an estimated 48.2 tonnes of nutrients entering the river system each year and discussing how this will benefit the river. See the feature article on page 3.

You can also read about the start of works for the Hawkesbury City Council South Windsor Effluent Reuse Scheme and some interesting insights into other HNRRP projects.

Bruce Boyes
Program Manager

About

HNRRP e-news is the newsletter for the Hawkesbury-Nepean River Recovery Program.

The program is managed by the Office of the Hawkesbury-Nepean (OHN) in partnership with New South Wales agencies.

HNRRP e-news is produced by the OHN and distributed through program partners.

Photos courtesy OHN and project partners.

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For more information visit *www.ohn.nsw.gov.au* or call (02) 4729 8138.

Works commence for recycled water scheme

The first on ground construction works for the recycled water distribution network in the Hawkesbury commenced late February.

Contractors Murphy McCarthy & Associates officially broke new ground and were keen to get the project moving.

It is expected that the construction of more than ten kilometres of recycled water distribution pipework to the various Hawkesbury City Council reserves, schools and sporting fields will be finished in late July 2011.

The next step in the process will be the construction of the storage tanks, an additional treatment process including a chlorine dosing facility, a pumping station to be located at the South Windsor Sewerage Treatment Plant and the irrigation system for the Hawkesbury City Council reserves.

The new distribution system will enable 100 million litres of drinking water currently used annually for irrigation to be substituted with recycled water.

Hawkesbury-Nepean River Recovery Program

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The Hawkesbury-Nepean River Recovery Program is funded by the Australian Government through the Water for the Future program.

Protecting Sydney's lungs

Cousins Rex and Bruce Boardman are determined to protect the 'lungs of Sydney' through a new project caring for Matahill Creek in the Cawdor Valley.

"This is a pristine farming area that's home to generations of farming families who are turning out high quality agricultural products," said Rex, who produces beef cattle and is returning the former dairy farm to a mix of free-range chickens and pigs.

"Being so close to Sydney means there's always pressure to sell the land for development, but these areas are the lungs of the city. The Sydney Basin would be a pretty terrible place to live without them."

Matahil Creek runs through both of the cousins' properties and into the Nepean River. Highly fragile soils and damage from cattle have seen the creek turn from a narrow waterway to an eroded chasm over the years.

Under the Nutrient Smart Farms project, Rex is installing 1750 metres of fencing to close off the creek from cattle, and building a concrete bridge so cattle can cross the creek without causing damage. He will also plant native trees and grasses to stabilise the banks.

Bruce, who runs a beef cattle stud on the adjoining property, is also fencing the creek and revegetating the banks.

"When the creek banks erode, the soil washes down Matahill Creek carrying excess nitrogen and phosphorus into the Nepean River, which is only one kilometer away," said Hawkesbury-Nepean Catchment Management Authority catchment officer Daniel Anderson.

"We estimate that the project on Rex and Bruce's properties will prevent more than 900 kilograms per year of nitrogen and 95 kilograms per year of phosphorous from reaching the Nepean River."

Rex believes the new plants will benefit the local wildlife as well as helping to stabilise the creek.

"This is quite a magnificent ecosystem, with frogs and lizards and beautiful birds, from finches and wrens up to wedge-tailed eagles," he says.

"I love the birds, and improving their habitat and caring for the creek will be a big achievement for our family.

"We've done Landcare work over the years and we really believe it's important to look after this valley. We never want to see it subdivided. We want to show Sydney people that it's possible to have productive healthy farms even this close to the city."

For more information call the Hawkesbury-Nepean Catchment Management Authority on 4725 3050 or the Smart Farms Information Line on 4588 2118.

Camden landholder Vic Boardman (centre) and Rex Boardman (left) with Daniel Anderson

Meters improve accuracy for Sydney Uni

Sydney University now has a number of meters installed under the Improving Hawkesbury-Nepean Water Balance Accounting Project. The meters account for water taken by the University's Camden Farms.

James Bell is the Operations Manager at the Plant Breeding Institute and is responsible for three of the Sydney University farms which have received meters. These farms are mainly used for winter cereal research cropping and one is also used for turf grass research.

"The data from our new water meters will be used for our winter cereal research cropping conducted at the University of Sydney Camden Campus," James said.

He believes the meters will be a valuable resource for an accurate assessment of the water use on site and will also provide an important tool for management of the research institute's farming land.

"We have appreciated the level of commitment the NSW Office of Water have had in talking to water licence holders and explaining what information we can now obtain from these new meters," he said.

Two other Sydney University Farms have also had meters installed under the project. These farms concentrate on pasture production research for Sydney University's dairy.

To date, over 570 meters have been installed in the Hawkesbury-Nepean, which equates to approximately 85% of water extraction across the catchment.

For further information call 1800 220 952 or visit *www.water.nsw.gov.au/Water-licensing/Metering/Hawkesbury-Nepean/hawkesbury-nepean/default.aspx.*

Meeting our objectives: reducing nutrient inputs to the river system

In this edition of HNRRP e-news we will look at how the Program is meeting one of its primary objectives.

The HNRRP aims to prevent an estimated 48.2 tonnes of nutrients (nitrogen and phosphorus) entering the Hawkesbury-Nepean river system each year.

High concentrations of nutrients are one of the leading causes of poor water quality.

Excess nutrients in our waterways can lead to outbreaks of aquatic weeds and algae, which can devastate aquatic ecosystems and obstruct or prevent boating and recreation in the river.

Nitrogen and phosphorus enter the river system from urban runoff, sewage treatment plant releases and farm runoff.

Although farm runoff is only one of many nutrient sources, nutrients from fertilisers, livestock waste and livestock use of riparian zones contribute to increased nutrients entering the river.

Most of the Program's nutrient reduction targets are expected to be achieved by the Nutrient and Water Smart Farms projects, which are minimising farm run off and nutrient export from agricultural enterprises in the river catchment.

This is occurring through education of landholders and on ground works, including fencing to exclude cattle from streams and riparian zones, better targeted fertiliser use, runoff retention ponds and improved management of livestock waste.

To verify that reductions are achieved, information is being collected to quantify the amount of nutrients leaving farms before and after interventions.

Estimates of nutrient export rates are currently lacking for some farm types in the Hawkesbury-Nepean basin and also nationally.

The Nutrient Export Monitoring project is helping to fill this gap.

Managed by the NSW Department of Environment, Climate Change & Water (DECCW), the Nutrient Export Monitoring project has the objectives of:

» Quantifying the nutrient export of agricultural activities within the Hawkesbury-Nepean catchment.

» Evaluating the extent of nutrient reductions achieved by the Nutrient and Water Smart Farms projects.

» Providing a direct measure of the performance of the Nutrient and Water Smart Farms projects.

The project is addressing its objectives by improving the estimates of nitrogen and phosphorus export rates from a range of agricultural land uses in the Hawkesbury-Nepean region.

Runoff water samples have been collected from a range of land uses, namely non-dairy grazing, market gardens, turf farms and dairies.

The samples were collected following rain and irrigation events and the volumes and nutrient concentrations measured so as to calculate nutrient loads and export rates.

This data is enabling nutrient export rates to be determined for different land uses within the catchment.

To quantify nutrient export reductions achieved through the Nutrient Smart and Water Smart Farms projects, water samples are taken at sites with and without interventions in place. The differences in loads or export rates will then be used to estimate the reductions achieved.

The project is also using rainfall simulations to examine the effectiveness of amending soils with compost to reduce nutrient losses. Using a rainfall simulator, artificial runoff is induced in a controlled environment and concentrations of nutrients are compared between compost amended and unamended plots.

Currently, the nutrient management works being implemented are set to exceed targets for reductions in nutrient exports from farms.

The Smart Farms projects are not only enabling on ground works resulting in immediate reductions in nutrient loads entering the river system, they are also enhancing the capacity of landowners to manage nutrients.

A field vegetable site with a monitoring system in Rossmore, South Western Sydney

By changing land management practices, participating landowners will ensure that the benefits of nutrient reductions and further improvements will continue in the long term.

A reduction in nutrients entering our river system means fewer algal blooms and choking growths of aquatic weeds and, as a result, more oxygen in the water for other plants and animals.

In short, a healthier river with more opportunities for recreational activities, such as boating, kayaking, swimming and fishing.

In the next edition of HNRRP e-news we will detail how the HNRRP is achieving its other primary objective - securing 7.24 gigalitres per year for additional environmental flows in the Hawkesbury-Nepean river system.

Our logo

The design and colours of the Hawkesbury-Nepean River Recovery Program logo represent the river and the river landscape, indicating the role of the HNRRP in improving river health. The interconnecting blue elements also reflect partnership with the community and inter-agency collaboration.

Hawkesbury-Nepean River Recovery Program

Our river on show

The Hawkesbury river will be the star of an ABC Landline story to air later this month.

The popular ABC program filmed a number of important environmental projects and works being conducted along the Hawkesbury river.

Among the local volunteer groups featured were the Willow Warriors, who work to control the black willow and other weeds on the river.

The filming was organised by Hawkesbury-Nepean Catchment Management Authority to help showcase the work being carried out to improve the health of the river.

The story is expected to screen nationally in late March.

Aquatic weeds get the chop

As well as the Hawkesbury-Nepean River Recovery Program, there are a number of other programs aimed at reducing weeds and weed growth in the Hawkesbury-Nepean River.

One example is the harvesting project, a joint effort of the Office of the Hawkesbury-Nepean and the Hawkesbury River County Council.

Using a mechanical harvester to remove aquatic weeds at Windsor and Penrith, this project has helped improve the amenity of the Hawkesbury-Nepean River early this year. The project delivers immediate, if temporary, relief.

Abundant in summer months, plants growing under the water surface can be a nuisance to everyone on the river including irrigators needing to maintain pipes.

In their natural state, native plants provide habitat for fish, food for water birds and stabilise sandy riverbeds, but in conditions of high nutrients and high temperatures even native plants can overgrow alongside invasive exotic species.

Other projects for improved river health include more water released from dams for environmental flows and reducing nutrients entering the river system from stormwater and wastewater.

Even if all nutrients could be stopped, it could take many years for aquatic plants to be brought back to a manageable level. Strategic harvesting is likely to play a role in controlling aquatic weed, at least for the short term.

What are we doing?

Reducing nutrient run off

The Nutrient Smart Farms Project is reducing nutrient runoff from agricultural activity through education and on ground works, including compost treatment. Managed by Industry and Investment NSW and the Hawkesbury-Nepean Catchment Management Authority.

Improving agricultural water efficiency

The Water Smart Farms Project is making more efficient use of river and town water for irrigated agriculture by upgrading irrigation systems, improving water harvesting and reuse, and through education and training. Managed by Industry and Investment NSW.

Ensuring equitable water use

The Improving Hawkesbury-Nepean Water Balance Accounting Project is ensuring equitable and efficient water use through the installation and upgrade of water metering systems for up to 2,000 licensed water users. Managed by the NSW Office of Water.

Improving irrigation practices

The Irrigation and Landscape Efficiency Project is helping to improve irrigation efficiency in non-agricultural activities by offering subsidies to councils, schools and golf courses to assess their open space irrigation, leading to on-ground works to improve practices. Managed by Sydney Water Corporation.

Returning water to the river

The Licence Purchase Project is buying back water access licences from willing sellers across the catchment to increase the amount of water that stays in the river system. Managed by the Department of Environment, Climate Change and Water.

Recycling and reusing water

The South Windsor Effluent Reuse Scheme is constructing a recycled water plant at Hawkesbury City Council's South Windsor sewage treatment plant, along with a distribution system to supply the recycled water to council reserves, schools and other customers. Managed by Hawkesbury City Council.

Measuring success

The Nutrient Export Monitoring Project is measuring nutrient exports from primary industries before and after actions are implemented through the Nutrient and Water Smart Farms projects. Managed by the NSW Department of Environment, Climate Change and Water.

More information

For more information on each project visit *www.ohn.nsw.gov.au/River-recovery/default.aspx* and click on the project links.

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