

HNRRP e-news

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Welcome

In the last edition of *HNRRP e-news* we discussed how the Hawkesbury-Nepean River Recovery Program is meeting one of its key objectives - the prevention of an estimated 48.2 tonnes of nutrients (nitrogen and phosphorus) entering the Hawkesbury-Nepean river system each year.

In this edition we look at our other key objective - securing 7.24 gigalitres (billion litres) per year for additional

environmental flows in the Hawkesbury-Nepean river system. See the feature article on page 3 to find out how we are achieving this objective.

You can also read about the HNRRP projects and how they are progressing as the program nears completion.

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.



Tanks save water & money

Many Hawkesbury-Nepean greenhouse growers have begun installing rainwater tanks to harvest water and reduce their reliance on costly drinking water.

The WaterSmart Farms (WSF) project has approved grant funding for more than 40 rainwater tank projects.

The rainwater will be used for irrigation instead of drinking water and will save growers thousands of dollars worth of water every year. Each megalitre (1 million litres) captured and used equates to approximately \$2,000 in savings.

Zafer Boustani, a hydroponic greenhouse grower at Thirlmere, has completed installation of a WSF-funded rainwater tank.

A 172,000 litre tank and smaller transfer tank were installed to collect rainwater from the greenhouse roof.

The water is pumped into the supply tank for the greenhouse and used to grow vegetables.

The tank will fill with about 25mm of rain and will take about 10 days to empty. In most years it should supply about a third of greenhouse water needs.

"When it rains I will save money. It will not work all the time, but when it rains I will save," said Mr Boustani.

For more information call the Smart Farms Information Line on 4588 2118.



Recycled water plant celebrated

An event to celebrate the connection of a water distribution line to existing irrigation systems was held at Bligh Park earlier this month to mark the significant progress made on the Hawkesbury City Council South Windsor Effluent Reuse Scheme.

New South Wales Senator Doug Cameron joined council staff, members of Bligh Park Soccer Club and Office of the Hawkesbury-Nepean staff at Bounty Reserve to mark the occasion.

Senator Cameron said the project includes construction of an associated distribution system to irrigate Council reserves and schools at South Windsor and Bligh Park with recycled water.

"Having a continuous source of water to irrigate playing fields will not only improve the playing surfaces and

quality of the open space areas at South Windsor and Bligh Park, but also save about 100 megalitres each year of drinking water currently used for open space irrigation," Senator Cameron said.

Construction of the disinfection facility, pipe distribution network and chlorination tank is now complete. The slab for the two-megalitre storage tank has been poured and construction has begun on the storage tank and electrical switchroom.

Hawkesbury City Council Mayor, Councillor Bart Bassett, said the celebration demonstrated the progress on this project, and its potential to benefit the community.

"The Bligh Park Soccer Club is just one sporting group who will benefit from this project," said the Mayor.

Senator Cameron and Councillor Bassett (right) joined the Bligh Park Soccer Club at Bounty Reserve



"Hawkesbury City Council has been pleased to partner with the Australian Government and the Office of Hawkesbury Nepean on this project. To see construction advancing at this rate is very exciting," the Mayor concluded.

The Australian Government has contributed \$9,138,500 to the construction of the \$9.8 million recycled water scheme.

The Northbridge Oval synthetic surface is now in use. *Photo: Jason Baker.*



Synthetic turf a success for Willoughby

Newly installed synthetic turf at Northbridge Oval in Willoughby City has proved an instant success, allowing the sports ground to stay open since its installation, despite pouring rain that forced other North Shore ovals in Sydney to close.

Willoughby Council received funding of \$100,000 for the upgrade from Sydney Water's Irrigation and Landscape Efficiency Project (ILEP).

The synthetic surface does not require irrigation, resulting in a saving of 3.8 megalitres of potable water per year.

Rain water run off from the field is captured and sent to two dams on the adjacent golf course. This water is used to irrigate the golf course, resulting in further water savings.

Opened on Saturday 16 April, the 10,000 metre square field is one of the

first publicly available synthetic turf sports grounds of its size in Sydney.

It features an impermeable, plastic membrane, followed by a thick layer of crushed stone aggregate to permit drainage under the synthetic grass.

The FIFA standard oval has been graded to drain to the south eastern side into new concrete subsoil drains, with the water ending up in the nearby Northbridge Golf Club dams for irrigating the golf course.

The previously weather dependant oval can now take up to 100 playing hours per week in all conditions while other ovals in the area are 'rested' due to rain or general wear and tear.

Willoughby Council's Infrastructure Services Director, Steven Head said, "This groundbreaking project has provided local sports groups with an

invaluable facility that will also attract sports competitions and other events into the area."

Mr Head also added that Willoughby Council has taken steps to improve the drainage at other fields including recent work at Willoughby Oval, and hopes to install more synthetic fields in the future.

The Northbridge Oval surface also includes an innovative cricket pitch which is sunk and covered with a FIFA 1 Star surface during the football season and then raised hydraulically for the cricket season.

The upgrade involved collaboration between the State and Australian Governments, Ku-ring-gai District Soccer Association and Northbridge Football Club.

Meeting our objectives: securing water for the environment

The Hawkesbury Nepean is a catchment of national significance that provides the majority of the drinking water for over 4 million people living in Sydney, the Illawarra, Blue Mountains, Southern Highlands, Lithgow Valley and Central Coast (70% of the population of New South Wales). Its waters support important agriculture, horticulture, fishing and mining industries, and each year more than 10 million people visit the Hawkesbury-Nepean catchment to experience its natural assets.

Environmental flows (e-flows) are important to address river health issues that have arisen from reduced river flows downstream of the catchment's major water supply dams.

E-flows are river flows, or aspects of the river flow pattern, that are either protected or created for an environmental purpose and can include:

- » flow releases from dams, e.g. the environmental flow release from the Upper Nepean dams
- » where there is no dam, protecting a portion water in the river for environmental purposes
- » spill events over dams e.g. high flows that spill over a dam to flush sections of the river; or
- » contingent flows, where water is set aside in dams and released for a specific purpose.

There is no single solution or volume of water that would suit all aspects of river health. Our rivers have evolved around variable flows. To achieve a sustainable river requires a whole range of integrated management actions that will better support important river values.

This includes both water quantity and quality improvements. The Hawkesbury Nepean River Recovery Program is making an important contribution to improving river health – both above and below the dams. It complements and supports NSW Metropolitan Water Plan river health initiatives such as:

- » new variable environmental flow releases from the Upper Nepean dams (Avon, Cataract, Cordeaux and Nepean);

- » modified Nepean weirs to allow variable environmental flows to pass downstream of the Upper Nepean dams and facilitate fish passage; and

- » St Marys Recycled Water for river health (treatment of sewage effluent using reverse osmosis).

Four of the seven projects of the Hawkesbury Nepean River Recovery Program are making more water available for the environment either through increased water efficiency or reduced river extraction.

The **Water Smart Farms** project is making around 5.9 billion litres per year water savings at irrigated farms in the Sydney Basin, where 4.55 billion litres per year will be legally secured for additional environmental flows in the Hawkesbury-Nepean system, Sydney's water supply security will be increased by 0.25 billion litres, and up to 1.1 billion litres per year water savings will remain with the participating entitlement holders.

The **Licence Purchase** project is increasing the water available for environmental flows by purchasing an estimated 3 billion litres of entitlement for the environment which will reduce existing extractions from the river by approximately 1.68 billion litres per year.

The **Irrigation and Landscape Efficiency Program** is increasing the water available for environmental flows by making 1.06 billion litres per year of potable water savings through improved efficiency of water use in open space irrigation using improved technology, land and site management practices.

Hawkesbury City Council's **South Windsor Effluent Reuse Scheme** is replacing 100 million litres per year of potable water use for open space irrigation with treated effluent from the South Windsor sewage treatment plant.

The water savings under the Hawkesbury Nepean River Recovery Program can be categorised as:

1. savings from reduced river extractions either from increased efficiency (component of Water Smart Farms project) or purchase of licence entitlements for the purpose of the environment (Licence Purchase Project);

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2. potable water savings from on farm or system efficiencies for either the environment or to contribute to Sydney's water security (Water Smart Farms – NSW Climate Change Fund component, South Windsor Effluent Reuse Scheme project and Irrigation and Landscape Efficiency Program); or

3. a share of the water efficiency savings to licence holders (component of Water Smart Farms project).

These water savings will be secured through a water sharing plan under Section 8 of the NSW Water Management Act 2000. It allows for protection of different categories of environmental water. Water sharing plans protect the health of our rivers and groundwater while also providing water users with perpetual access licences, equitable conditions, and increased opportunities to trade water through separation of land and water. The water sharing plan is the legal mechanism that enables the protection and accounting of reduced river extractions or potable water savings achieved through the HNRRP projects.

The Water Sharing Plan for the Greater Metropolitan Region Unregulated River Water Sources was made on 2 March 2011 and will commence on 1 July 2011.

More water for the environment combined with a reduction in nutrients entering our river system means fewer algal blooms and excessive outbreaks of aquatic weeds and, as a result, more oxygen in the water for other plants and animals.

Importantly, making more water available for critical aspects of river flows and reducing nutrient provide more conducive conditions to support our native plant and animal species which will provide a healthier river with more opportunities for recreational activities, such as boating, kayaking, swimming and fishing.

For further information on water sharing plans visit the NSW Office of Water website at <http://www.water.nsw.gov.au/Water-management/Water-sharing-plans/Plans-on-exhibition/Exhibitions-open/gmr-unreg/default.aspx>

Monitoring greenhouse nutrients

Greenhouse hydroponic horticulture is a significant user of town water and it discharges both water and nutrients as waste.

There is potential to reduce the use of town water by harvesting rainfall from roof runoff. Water and nutrient discharges can also potentially be reduced by controlled recycling of water that drains from the hydroponic system.

To utilise rainwater and to recycle used water, the system needs to have the capacity to disinfect the water to reduce harmful plant pathogens.

The Nutrient Export Monitoring Project is measuring the waste discharge from a greenhouse complex in Rossmore. The greenhouse has a tank installed to capture rainfall runoff and equipment to disinfect the rainwater and recycled water.

The discharge rates of waste water and the waste loads of nitrogen and phosphorus are monitored. Volumes are measured and logged electronically and samples are collected for nutrient analyses in a laboratory.

This information provides the basis for estimating the savings in discharged nutrients from the greenhouse when water recycling is started. The captured nutrients will greatly reduce the farmer's annual fertiliser costs.

The tank and disinfection equipment at the Rossmore site were installed under the Nutrient SmartFarms Project with funding from the NSW Climate Change Fund.



Technician Adam McSorley, collecting a greenhouse wastewater sample at Rossmore

Learn how to use your water meter

The NSW Office of Water is holding information sessions in the Hawkesbury-Nepean catchment area to demonstrate how to operate the water meters installed by the Department in the last two years.

The session is intended for metered water licence holders and will cover the meter features and operation, fault reporting procedure and a demonstration of the operation of metering equipment.

Session locations and dates are as follows:

Richmond August 15, 11.00 – 12.00 pm Penrith August 16, 11.00 – 12.00 pm
Cobbitty August 17, 11.00 – 12.00 pm Goulburn date and time to be confirmed

Attendance is by registration only. To RSVP call Andrew Philippa on 4904 2562.

For further information visit www.water.nsw.gov.au/Water-licensing/Metering/Hawkesbury-Nepean/hawkesbury-nepean/default.aspx. To report a meter fault call 1800 353 104.

Have your say on NRM future

Landholders are being asked to provide their feedback on key natural resource management issues and practices in the Hawkesbury-Nepean region.

NSW Department of Primary Industries (NSW DPI), in conjunction with the Hawkesbury-Nepean Catchment Management Authority (HNCMA), are conducting a short survey to gather information about current rural natural resource management practices and how to improve on-farm programs in the future.

Landholders are urged to complete the survey to assist NSW DPI and the HNCMA in planning and implementing future natural resource management projects in the region. To encourage participation, respondents to the survey will be entered in a draw to win a stainless steel BBQ valued at up to \$1,500.

Scott Machar, Team Leader Incentives and Information Program for the Smart Farms project said this is a fantastic opportunity for landholders to invest ten minutes of their time to make a contribution into the future of their region.

The electronic survey can be accessed at www.surveymonkey.com/s/Nutrient_Water_Smart_Farms. Surveys must be completed by 30th June 2011 to enter the prize winning draw. The survey is also available through the HNCMA website at www.hn.cma.nsw.gov.au.

For further information on the survey (including the privacy statement and competition rules) contact NSW DPI on 02 4588 2118.

Licence purchase update

The Expression of Interest (EOI) process for the Licence Purchase project has closed.

Offers have been assessed with regard to their relative value for money and value to the environment. Transfer of entitlement from acceptable offers to the NSW Government are currently being finalised.

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 the NSW Department of Primary Industries 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 the NSW Department of Primary Industries.

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 Office of Environment and Heritage, Department of Premier and Cabinet.

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 Office of Environment and Heritage, Department of Premier and Cabinet.

More information

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

