

## Environmental improvement activity

### Winery Waste

St. Hallett grape marc is used on local golf course.

Stonier and Petaluma grape marc used by Botanic Gardens, Cranbourne and Mount Lofty respectively.

Knappstein is working with Clare Country Club golf course to supply treated winery liquid waste for irrigation.

Wither Hills grape marc is composted and spread as mulch on the vineyards. All the winery waste water is monitored and treated through an effluent system designed to meet the winery's specific needs and capacity. An irrigation system recycles the water onto a vineyard block.

### Renewing vegetation

For 6 years Petaluma has sponsored the revegetation of Cox's Creek which flows past the Bridgewater Mill in the Adelaide Hills. This is in partnership with the local Catchment Board.

Knappstein has rehabilitated the Hutt River, that runs through winery in Clare township, using local riparian species - supported by a government grant.



## MITCHELTON

### Mitchelton in the Goulbourn Valley wins \$45,000 grant for waste water treatment system saving 20,000 Litres of water

• Central Victorian wine producer Mitchelton has upgraded its waste water treatment system to give a 15% reduction of its total annual irrigation volume - (an estimated saving of 20 million litres of water per annum).

• The upgrade is being partially supported by a \$45,000 grant from the Australian Government Water Fund. The total cost of the project will be \$500,000.

• Selected from more than 4,500 applicants for round 2 of funding, Mitchelton Wines is the only Victorian winery to be granted funding in 2006.



### The Mitchelton Wastewater System

• The wastewater undergoes initial treatment via a solar-powered aeration unit.

• Water is then gravity-fed to a series of wetlands channels planted with locally-grown native reed species. These plants assist in assimilating high nutrient loads as well as filtering solids.

• The system, which allows for production expansion, was fully functional from the 2007 vintage.

Benefits for the local community are expected, including significantly lower volume requirements from the Goulburn River for irrigation, and regeneration of wetland habitats for local waterbirds and frogs.

## Water usage per winery

INDUSTRY STANDARD 3.46 ML/ha

### LNWG WINERY USAGE

- SMITHBROOK - 0.08 ML/ha
- KNAPPSTEIN - 0.60 ML/ha
- ST. HALLETT - 0.60 ML/ha
- STONIER - 0.75 ML/ha
- MITCHELTON - 1.67 ML/ha (INCLUDES PACKAGING USAGE AND FROST PREVENTION)
- PETALUMA COONAWARRA - 0.08/2.64 ML/ha (ONLY FOR FROST PREVENTION)
- ADELAIDE HILLS - 0.26/1.0 ML/ha (ONLY FOR FROST PREVENTION)



## SUSTAINABLE WINE GROWING NZ

[WWW.NZWINE.COM/SWNZ/](http://WWW.NZWINE.COM/SWNZ/)

- SUSTAINABLE WINE GROWING NEW ZEALAND WAS DEVELOPED TO:
- / PROVIDE A "BEST PRACTICE" MODEL OF ENVIRONMENTAL PRACTICES IN THE VINEYARD AND WINERY
  - / GUARANTEE BETTER QUALITY ASSURANCE FROM THE VINEYARD THROUGH TO THE BOTTLE
  - / ADDRESS CONSUMER CONCERNS IN MATTERS PERTAINING TO THE ENVIRONMENT AND WINEGRAPE PRODUCTION

## WITHER HILLS

- WITHER HILLS IS 'SUSTAINABLE WINE GROWING NEW ZEALAND (SWNZ)' ACCREDITED FOR ITS TWO LARGEST VINEYARDS - TAYLOR RIVER (FROM THE 2003/2004 SEASON) AND RARANGI (FROM THE CURRENT 2007/2008 SEASON) - AND HAS BEEN SWNZ ACCREDITED IN THE WINERY SINCE 2003 (THE WINERY IS AUDITED BIANNUALLY BY SWNZ, AND THE VINEYARDS TRIENNIALLY).
- WITHER HILLS WAS ONE OF THE PIONEERING WINERIES INVOLVED IN THE SWNZ PROGRAMME WHEN THE WINERY MANUAL WAS BEING DEVELOPED.

## SMITHBROOK

PEMBERTON

The Smithbrook vineyard is run as naturally as possible, with a philosophy of minimal chemical use, zero to minimal irrigation and the promotion of natural predators to control insect pests and associated diseases (this is sometimes supplemented by releasing extra insects into the vineyard).

Water use amounts to approximately 0.08 ML/ha per hectare on average with the majority of fruit being dry-grown. This represents a paltry 2% of average irrigation use per hectare across Australian vineyards.

Over 1,200 sheep graze the Smithbrook vineyard and property during the winter months and early spring, keeping grass "mown" as well as contributing to soil organic matter through their droppings.

The presence of the sheep prevents 3-4 passes in the tractor to cut the grass, as well as one herbicide pass.

A large number of guinea fowl and chooks roam throughout the vineyard. They are housed at night in a series of large moveable cages, which offer protection from foxes and eagles (they automatically close when the sun goes down). These birds forage around in the under vine area and eat out pests such as weevils. Damage to fruit by birds is minimised by the presence of eagles (with an eye on the chickens) and the blossoms from the native Marri Gum which grow in the area adjacent to the vineyard.

The overall atmosphere in the vineyard is very much one of a natural environment, with the presence of spiders (spider webs) and insects, as well as vines growing in balance with their natural conditions. Investigations are now under way to find the best suited mid-row flowering species to make the vineyard even more attractive to the right insect predators.

## Greenhouse Challenge Plus Awards

In July 2007 Lion Nathan was presented with two awards by Environment Minister Malcolm Turnbull at Parliament House in Canberra for outstanding achievement in greenhouse gas emissions reduction and leadership:

- (i) The Large Business award for outstanding greenhouse gas emissions reduction.
- (ii) The Greenhouse Challenge Plus Leadership Award.

### Impact of Climate Change on LNWG vineyards

LNWG IS CONSIDERING THE LONG TERM IMPACT OF CLIMATE CHANGE ON VINEYARDS.

THIS MAY INVOLVE:

- Altering varieties to suit climate where necessary and justifiable.
- Actively looking for new sites in cooler areas (St. Hallett in Eden Valley, Stonier in Mornington Peninsula, Petaluma in Adelaide Hills).

DEVELOPING THE TATACHILLA CLARENDON VINEYARD, HOME TO TATACHILLA. 250M ALTITUDE AND COOLER THAN MCLAREN FLAT.

### Lion Nathan has prepared a paper on Climate Change Risk Assessment to 2030.

- Covers all aspects of the business, internal and external.
- Ongoing assessment and treatment of risks - immediate and long term.

ALL LION NATHAN SUBSIDIARIES ARE MEMBERS OF THE NATIONAL PACKAGING COVENANT (NPC) WHICH PROMOTES REDUCTION OF PACKAGING MASS AND USE OF RECYCLED PACKAGING ACROSS THE BUSINESS.

## St. Hallett in the Barossa Valley works with ETSA to create new energy saving system



IN PARTNERSHIP WITH ETSA A THERMAL ENERGY STORAGE SYSTEM (TES) WAS INSTALLED AT ST. HALLETT IN JANUARY 2007. THIS REDUCES PEAK ELECTRICITY LOADS ON THE WINERY REFRIGERATION SYSTEM AND INCREASES ENERGY EFFICIENCY.

- This \$215,000 project was jointly funded by St. Hallett, and ETSA (\$100k), and is the first of its kind in Australia.
- It also operates in conjunction with recently installed Power Factor Correction. This initiative will significantly reduce electricity usage and thus greenhouse gas emissions.
- It is a 3 year joint project, but will continue to be operated by St. Hallett thereafter.