

# Tuning in to a DEEPER WISDOM

In 2005, natural sequence farming founder Peter Andrews was featured on ABC TV's *Australian Story*, since voted one of the top five episodes of the last 10 years. His book *Back from the Brink* is a national bestseller. Why are Andrews' ideas attracting so much attention?

When Peter Andrews developed the insights that inform his theory of natural sequence farming, he drew inspiration from the wisdom of the Australian landscape.

'While the challenges farmers face today are serious, we can draw much encouragement from the fact that for millions of years the Australian landscape operated in ways that ensured its sustainability,' he says. 'Hence we ought to be able to solve many of the current landscape and water problems by re-instating those basic functions of this ancient landscape that have proved so successful.'

'This is what natural sequence farming does.'

Natural sequence farming (NSF) is a long way from traditional farming and agricultural methods that have been practised in Australia to date. These were derived from farming practices developed for European soils and climates, and have caused significant damage to Australia's rural environment.<sup>1</sup>

The gradual loss of riparian vegetation, increased soil degradation and reduced soil stability have led to widespread erosion across the countryside, resulting in more deeply incised waterways that quicken river flows and carry water away from farmlands.<sup>2</sup>

Indeed, many features of the pre-European settlement landscape – like chains of ponds or pool-riffle systems that slowed the flow of water through the landscape – have largely been lost.

## What is natural sequence farming?

Natural sequence farming is based on restoring natural hydrological features in the landscape that existed before European settlement.

By mimicking the form and function of water flows in the Australian landscape before European settlement, NSF re-establishes a sequenced pattern of natural activities that re-hydrate, rather than drain, floodplains.



Peter Andrews demonstrating the benefits of natural sequence farming to visitors.

When these water-flow patterns are re-established, some important changes happen in the landscape, such as:

- Local flooding of a catchment's floodplain. This results in water and nutrient-rich sediments being spread over surrounding soil, hydrating the soil and supplying plant nutrients.



- Re-appearance of a freshwater 'lens' around the waterway. This in turn refills the aquifers connected to the waterway; these lenses effectively sit above the saline groundwater.

It's an approach that is elegant in its simplicity, according to Dr John Williams, NSW Commissioner for Natural Resources.

'Peter Andrews is putting back those chains of ponds by causing the rivers and streams in flood times to flood out and fill up the swamps and wetlands at the side of the streams. The first thing you have to do is create some obstruction to slow the flow.'

'Then Peter cuts little channels and little brooks that take the flood water from the stream and distribute it back over the wetlands and the floodplain.'

'The combination of the obstruction plus the carefully cut channels takes the water along pathways spreading it over the floodplain where it can soak into the shallow underground streams. This replenishes the swamps and wetlands that feed the plants and all the life within the landscape.'

'NSF is not about irrigation in the traditional sense of the word.'

'Rather than letting the water move out of the landscape and then bringing it back through traditional irrigation, Peter is retaining the water in the landscape – in the wetlands, swamps and shallow underground water storages in the floodplain.'

The success of this approach at properties such as Tarwyn Park in the

1 Williams J, Saunders DA (2002) Land use and natural ecosystems: A revolution in land use is the key to a sustainable landscape. Chapter prepared for 'In Search of Sustainability' conference, September 2003. [http://www.clw.csiro.au/staff/WilliamsJ/Landuse\\_Natural\\_Ecosystems.pdf](http://www.clw.csiro.au/staff/WilliamsJ/Landuse_Natural_Ecosystems.pdf)

2 Boulton AJ (1999) An overview of river health assessment: philosophies, practice, problems and prognosis. *Freshwater Biology* 41, 469–479. Erskine WD (1999) Oscillatory response versus progressive degradation of incised channels in South Eastern Australia. In *Incised River Channels: Processes, Forms, Engineering, and Management* pp. 67–95. Erskine WD, Webb AA (2003) Desnagging to resnagging: New directions in river rehabilitation in South Eastern Australia. *River Research and Applications* 19, 233–249.



**Recreating natural creek-bed structures also recreates natural stream flows, with longer water retention in the landscape – as shown here at the Frogrock Wines property near Mudgee.** Ed Turner

Upper Hunter Valley has sparked significant interest amongst scientists, farmers and politicians in NSF.

There are now scientific studies underway at a number of sites around Australia where NSF methods are being applied.<sup>3</sup>

### Scientists follow up

In 2002, the then-Deputy Prime Minister, the Hon. John Anderson, directed a multi-disciplinary panel of experts, led by the CSIRO, to examine the application of NSF principles at Tarwyn Park.

The panel's report concluded that Andrews had established a successful and sustainable farming system at the property. The panel also recommended rigorous testing of NSF in different landscapes and with different landscape uses.

In 2004, through an Australian Research Council (ARC) Industry Linkage grant, researchers began monitoring the effectiveness of NSF approaches at Gerry Harvey's property, Baramul Stud, in the Upper Hunter. (Harvey is co-founder and Chairman of the Harvey Norman retail chain.)

The researchers – from Southern Cross University, the Australian National University, the University of Newcastle, the NSW Department of Natural Resources and the Hunter Central Rivers Catchment Management Authority – are undertaking what they say is the most rigorous assessment on natural sequence farming to date.

Dr Richard Bush from Southern Cross University recently published a report on the findings from the last two and a half years of research. Bush concludes that the speed of response from the Baramul Stud riverine corridor to the NSF initiative has been surprising, particularly with respect to the following:

- Dramatic recovery of riparian vegetation within the channel.
- Development of channel features indicative of a rapidly recovering stream within and immediately downstream of the NSF structures. These landforms include the development of substantial channel bars and benches, the development of pools, riffles and low-flow meandering runs (shallow connecting flows).
- The persistence of surface water resources in the stream and pools within the NSF treatment reach, in contrast to the absence of surface water in the non-NSF areas upstream and downstream of the site.

- Demonstration of enhanced connectivity of the stream flow with floodplain shallow alluvial aquifers through groundwater and surface-water monitoring. This has occurred without a measurable change in the prevailing salinity of either the groundwater or the surface water in the NSF treatment reach.

A more detailed update of the ARC project can be found online.<sup>4</sup>

Additional scientific studies of NSF are also underway in biophysically diverse regions of Australia, such as Mulloon Creek<sup>5</sup>, near Bungendore, NSW, and the Gumlu property near Townsville in Far North Queensland.<sup>6</sup>

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*See page 32 for a review of Back from the Brink.*

#### More information:

Natural sequence farming,  
[www.nsfarming.com/](http://www.nsfarming.com/)

Natural Sequence Association,  
[www.naturalsequenceassociation.org.au/](http://www.naturalsequenceassociation.org.au/)

Bush R (2007) ARC Project Report: Restoring hydrological connectivity of surface waters and groundwaters: biogeochemical processes and environmental benefits for river landscapes. Southern Cross University, Lismore, NSW.  
[www.nsfarming.com/news070604.htm](http://www.nsfarming.com/news070604.htm)

'Natural sequence farming', *Catalyst*, ABC TV, May 2007, transcript,  
[www.abc.net.au/catalyst/stories/s1925553.htm](http://www.abc.net.au/catalyst/stories/s1925553.htm)

<sup>3</sup> Natural Sequence Association. [www.naturalsequenceassociation.org.au/](http://www.naturalsequenceassociation.org.au/).

<sup>4</sup> Bush R (2007) The ARC Project: Restoring hydrological connectivity of surface waters and groundwaters: biogeochemical processes and environmental benefits for river landscapes. Southern Cross University, Lismore, NSW. [www.nsfarming.com/news070604.htm](http://www.nsfarming.com/news070604.htm)

<sup>5</sup> Natural Sequence Association. Mulloon Creek natural sequence farming demonstration. [www.naturalsequenceassociation.org.au/index.php?option=com\\_content&task=view&id=16&Itemid=32](http://www.naturalsequenceassociation.org.au/index.php?option=com_content&task=view&id=16&Itemid=32).

<sup>6</sup> The Natural Edge Project (2007) Land re-hydration – natural sequence farming. CL Creations Publishing. [www.sustained.com.au/index.php?option=com\\_content&task=view&id=97&Itemid=29](http://www.sustained.com.au/index.php?option=com_content&task=view&id=97&Itemid=29).