The wealth derived from Eastern Australia's grazing and crop farms has come at a price to both the natural environment and sustainable agriculture. Scientists in Albury Wodonga have found that a spoon full sugar can is a sweet restorative for native woodland grasses. Tanya Ha took a stroll down the paddock to look at this grass roots research.

Tanya Ha
Grassy box gum woodlands once covered five million hectares of the slopes and plains that run from Queensland through to Northern Victoria, But now less than ten percent remain and only one percent are in high quality condition.

Assoc Professor Ian Lunt
When the first explorers came through, they saw this tall Kangaroo Grass right up to their saddles, they so saw Yam Daisies which their sheep ate really fast and all the lilies and they saw the great potential with this for what made Australia's agricultural history. These are the areas where our crops, our canola, our wheat and our sheep farms are across South Eastern Australia.

NARRATION
The rapid development of agricultural from the 1800s onwards, saw most of the grassy woodland ecosystem disappear.

Assoc Professor Ian Lunt
So now the best patches in these very small remnants yeah especially in cemeteries and country towns, along railway lines where the fences went up really early and that stopped grazing animals getting in there. That's protected all these species that have disappeared from everywhere else in the landscape.

NARRATION
So how can the understory be returned to native grassland? Maybe the old cemetery sites hold the clue.

Dr Suzanne Prober
In the cemeteries there were hardly any weeds so we asked the question, well, if these sites have got lots of weed seeds coming in and blowing into them, why aren't they establishing and becoming weedy just like all of the sites around?

Assoc Professor Ian Lunt
This looks like, like a really diverse patch here. So all across here we have Chocolate Lilies. They'll come up in fields of yellow later in the season. This is a Goodenia . It has a yellow flower. This is a Common Everlasting with the silver foliage here. Oh look here's a little Greenhood Orchid which is really rare in the region.

Tanya Ha
What are these here?

Assoc Professor Ian Lunt
Yep. This is a Sundew. So it's a carnivorous plant. Right over here we've got a Yam Daisy which is one of the rarest of the plants in this region now that persists only in these small cemeteries.

NARRATION
They sampled the soil in the cemeteries and compared it to the soil in the weedy sites. The results were astonishing.

Dr Suzanne Prober
What we found was that the cemeteries had very low soil nutrient levels and in particular very low soil nitrate. The levels were down below two milligrams per kilo whereas in the weedy sites you might be finding up to thirty milligrams per kilogram.

NARRATION
Could the solution be to starve the weeds of nutrients?

Dr Suzanne Prober
First we wanted to actually test whether our idea that soil nitrate or soil nutrients were actually driving the weeds.

NARRATION
A series of test plots was established along with a control area full of weeds.

Assoc Professor Ian Lunt
Well we did an experiment where we tried to reduce the amount of available nitrate in the system and an extraordinarily easy way to do that on small plots is to add sugar, just white sugar, so we went to the local shop and bought up all the bags of white sugar and threw them over the ground. So when we put this carbohydrate on, the soil microbes gobbled that up really quickly and when they do, they gobble up a lot of that nitrate and it's a race to get that nitrate. They get it faster than the weeds do so then the weeds get starved of nutrients.

NARRATION
So what impact does that have on the battle between the weeds and the native vegetation?

Dr Suzanne Prober
So this is the control plot here. So at this plot we haven't applied any treatments.

Tanya Ha
Very lushly filled with weeds.

Dr Suzanne Prober
Indeed. The first thing that you notice is how thickly filled with weeds it is and how few spaces there are for the little native species.

NARRATION
And what about the sugared plots?

Dr Suzanne Prober
We've added sugar every three months to this plot. We've really changed the structure of this grassland. We've now got lots of nice open spaces that the native plants can grow in. And even though we haven't added the native wildflower seed to these sites, we are starting to see that we're getting some of the native wildflowers growing back into these little spaces between the grass tussocks.

NARRATION
Sugar provides a short term hit but it isn't seen by the researchers as a solution.

Assoc Professor Ian Lunt
In our plots we use sugar to find out that nutrients were really important but then when we got the native grasses in we realized that actually they could do that role for us, so Kangaroo Grass in that system is a really keystone species.

NARRATION
Kangaroo Grass takes up the nitrates so they aren't available for the weeds. The weeds stay small while the native understory plants get the competitive edge.

Assoc Professor Ian Lunt
The next bit that's really important is to be able to upscale this to a scale that becomes practical for landholders and managers to use over large areas and the key component there is really working out really reliable ways to get native grasses established.