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Submission to House of Representatives Standing Committee on Primary Industries and Resources

Inquiry into the role of government in assisting Australian farmers to adapt to the impacts of climate change

Committee Secretary
Standing Committee on Primary Industries and Resources
PO Box 6021
House of Representatives
Parliament House
Canberra ACT 2600

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CONTENTS OF THIS SUBMISSION

Sincerely

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Green Agriculture Stewardship Scheme (GASS)

1. Executive Summary

The Federal Government could fast-track the adoption of innovative, productive farming technologies that confer resilience in a variable climate, increase gross margins per hectare and improve the international competitiveness of the agricultural sector, via the underwriting of a Green Agriculture Stewardship Scheme (GASS).

The proposed stewardship scheme would provide incentive payments of $200/ha for the establishment of 100 x 50 hectare Green Agriculture Innovation Nodes (GAIN sites) strategically located across the arable temperate zone.

In order to qualify for the annual stewardship payment, a landholder managing a GAIN site must showcase leading edge land management practices that foster plant growth in **both summer and winter**, produce **high quality food,** improve **soil water holding capacity,** enhance **biodiversity** AND **sequester more carbon than emitted**. Failure to meet any of these five essential criteria will result in non-payment.

Implementation of the proposed GASS scheme would hasten adoption of a range of highly successful management technologies that have already been developed by landholders to deal with a warming, drying environment but are not currently supported by R&D funding or state agency policies.

It is proposed that 100 GAIN sites be established, commencing with 20 in 2009, adding 30 in 2010 and another 50 in 2011. The total cost of stewardship payments over the five-year term of the project would be $3.7 million. Additional funds for project coordination, measurement of nutrient levels in farm produce, soil moisture, soil carbon and biodiversity monitoring, travel and administration would also need to be negotiated.

GAIN sites would provide on-ground proof of resilient, high quality, profitable agricultural production, active soil-building, carbon sequestration, biodiversity enhancement, improvements to landscape function and the aesthetic benefits of yearlong green farming techniques.

Importantly, GAIN sites would serve as design and innovation templates for expansion to other properties in their designated region as well as nationally and internationally. As a result of the measured and publicised benefits of the stewardship scheme, it is anticipated that regenerative farming techniques would be widely adopted throughout the agricultural community, hence not requiring further government funding other than the initial five year allocation.

The 100 GAIN sites would also provide an ideal prototype for a nation-wide project-based soil carbon offsets scheme.

Funding for a prestigious $25,000 pa Green Agriculture Innovation Award to run concurrently with the Green Agriculture Stewardship Scheme has been sourced from a philanthropic trust.

The proposed Green Agriculture Stewardship Scheme is clearly defined, targeted, low-cost, achievable, outcome based, incentive driven and immediately available for implementation.

2. Adapting to climate change

Food security, desertification, biodiversity loss, an escalating world population and rapidly rising levels of atmospheric CO2 are key global issues.

The financial viability of the agricultural sector, as well as the health and social wellbeing of individuals, families and businesses in both rural and urban communities, are inexorably linked to the functioning of the land.

There is widespread agreement that the health of vegetation, soils and waterways in many parts of the Australian landscape have become seriously impaired, resulting in reduced resilience in the face of increasingly challenging climate variability.

Agriculture is the sector most strongly impacted by these changes. It is also the sector with the greatest potential for fundamental redesign. The Australian nation has the opportunity to be a world leader in the implementation of innovative technologies centred on adaptation to climate change.

In addition to enabling the farming community to more effectively deal with warmer, drier conditions, the restoration of landscape function will result in the active drawdown of excess CO2 from the atmosphere via stable biosequestration in soils.

Restoring landscape function

There is no mechanism for building topsoil other than the presence of green plants and the microbial populations they support.

Over 95% of terrestrial diversity is **in** the soil. In order for this life to flourish, the soil ecosystem requires fuel in the form of carbon (from green plants) and 'habitat' in the form of high root biomass. Further, the soil surface requires year-round protection from erosion and temperature extremes (both highs and lows).

On a global scale, the 'industrialised agriculture' era has resulted in many billions of hectares of land being laid bare for long periods of time. Bare ground results in significantly higher soil temperatures, reduced soil water-holding capacity, increased evaporation, impaired soil structure and lower plant nutrient availabilities.

The reason many current land management systems are failing is because green plants are only present for part of the year, with bare ground the remainder of the time. It is vitally important that soil be covered with living plants in all seasons, particularly summer.

Actively growing groundcover acts as a solar-powered carbon pump, feeding the soil ecosystem with biochemical energy derived from atmospheric CO2 and sunlight.

Perennial groundcover has multiple agricultural, ecosystem and landscape benefits in addition to restoring soil health. For example, weeds cost the Australian economy $8 billion annually when the value of lost production and reduced biodiversity are added to money spent directly on weed control. If land is left 'empty' it creates a space for weeds to colonise.

Redesigning agriculture

Fundamental redesign of food, fuel and fertiliser production is vital to the survival and profitability of the Australian agricultural sector. We cannot afford to continue with business as usual.

While climate cannot be altered, the resilience of the agricultural sector can be markedly improved by changes to land management regimes.

The essential first step to rebuilding topsoil is actively growing groundcover with high photosynthetic capacity. A cover of green plants fixes atmospheric carbon, providing fuel for the soil engine, while also buffering soil temperatures, improving water infiltration and slowing evaporation, so that soil remains moister for longer following rainfall.

An example of agricultural redesign is perennial cover cropping, a leading edge innovation currently being implemented by Australia's top farmers. By way of illustration see below two photographs of a crop sown into perennial pasture on Nigel Kerin's property at Yeoval in the Murray Darling Basin.

Nigel Kerin was NSW Farmer of the Year in 2008. The first photo shows Mr Kerin in his newly sown crop (no bare ground) and in the second Mr Kerin is admiring his bounty closer to harvest (perennial croplands look like any other farmland once they approach maturity). This 'yearlong green' land management technique produces high quality, nourishing food simultaneously with restoring landscape function and providing ecosystem services such as oxygen-rich air and clean water.

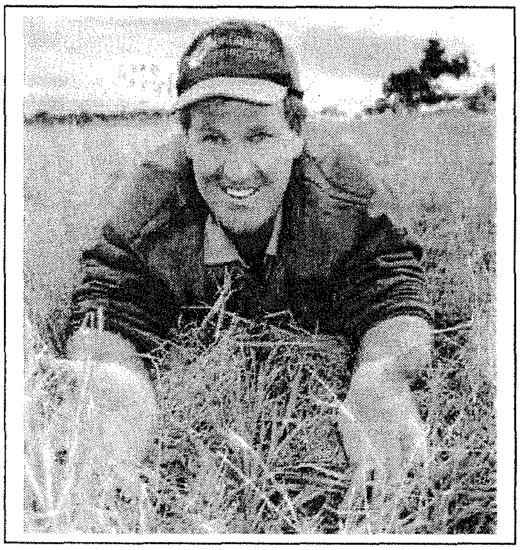

Fig.1. Nigel Kerin, 2008 NSW Farmer of the Year, in wheat crop sown into dormant perennial pasture (above) and in same crop approaching maturity (right) *Photos courtesy Matt Cawood, the LAND*

Over summer this land supports actively growing perennial grasses, providing erosion and weed control, feeding livestock and soil biota, sequestering atmospheric carbon, rebuilding topsoil, restoring soil structure and improving moisture holding capacity. When groundcover is perennial, land can respond productively to rain at any time of year, maximising opportunities for income generation.

For further information on perennial cover cropping see 'Our soils, our future', posted on the Amazing Carbon website (www.amazingcarbon.com), containing photographs from 'Jedburgh', the Warren property visited on 12 September 2008 by the Senate Standing Committee on Rural and Regional Affairs and Transport. This property is also in the Murray Darling Basin. Property owner Scott McCalman was NSW Farmer of the Year in 2005.

The most meaningful indicator for the health of the land, and the long-term wealth of a nation, is whether soil is being formed or lost. If soil is being lost, so too is the economic and ecological foundation on which production and conservation are based.

3. Green Agriculture Stewardship Scheme (GASS)

The most effective way to generate on-ground change is to actively engage landholders in participatory approaches to innovation and extension. Regenerative land management techniques such as 'yearlong green' represent fundamental redesign and hence are subject to 'resistance to change'.

It is recommended that the Green Agriculture Stewardship Scheme initially target regions which have only short-term annual cover (commonly monoculture) for part of the year and bare ground for the remainder. There are approximately 20 million hectares of land currently used for dryland broadacre cereal cropping (bare summer fallow) and 130 million hectares of grazing land lacking perennial groundcover.

These two land uses, comprising a land area of approximately 150 million hectares, incorporate a large portion of the Murray Darling Basin plus agricultural regions in south-east, southern and south-western Australia. This annual crop and/or annual pasture land is devoid of yearlong, biodiverse groundcover, exposing unprotected soils to erosion, soil structural decline, productivity loss, salinity, sodicity, acidity, significantly reduced soil water-holding capacity, lower nutrient availabilities, an increase in weed, pest and disease problems and markedly reduced resilience to climate variability.

Current 'best management' practices are failing to halt land degradation. This is because most 'best management' [as yet] does not include a return to perennial groundcover.

NSW DPI figures indicate that even with zero till, broadacre cropping results in the loss of an average 400kg/ha soil carbon over the summer fallow period (that is, emissions of around 1500kg/ha/yr $CO2$). Losses of soil carbon result in loss of soil structure and soil water holding capacity, creating a downward spiral of reduced resilience and reduced productivity.

The legacy for current landholders is that input costs for the agricultural sector are rising rapidly while natural productivity is falling. These changes can be reversed if the FUNCTION of the landscape can be restored.

The Green Agriculture Stewardship Scheme will result in the establishment of 100 strategically placed, nation-wide, highly publicised demonstration sites (Green Agriculture Innovation Nodes), showcasing leading edge technologies that restore photosynthetic capacity, reverse soil structural decline, improve carbon biosequestration, increase soil water-holding potential, enhance productivity and increase gross margins per hectare. These technologies have already proved successful and profitable for individual landholders in assisting their adaptation to a warmer, drier climate.

A simple incentive scheme designed to catalyse innovation and fast-track adoption may prove less expensive, easier to manage and have broader application than a top-down prescriptive approach to land management.

4. Green Agriculture Innovation Nodes (GAIN sites)

It is recommended that the Green Agriculture Stewardship Scheme initially comprise 100 Green Agriculture Innovation Nodes (GAIN sites) strategically located across the continent within the land area of 150 million hectares described in the preceding section.

Designated GAIN sites will comprise 50 hectares of land currently used for annual winter cropping or livestock grazing on annual pasture. Landholders will receive a stewardship payment of $200 per hectare per year for the GAIN site provided ALL five of the following criteria are satisfied:-

1. Conversion of ephemeral annual groundcover to yearlong green (perennial groundcover and/or perennial shrubs and/or cocktail cropping and/or perennial cover cropping)
2. Quality food produced
3. Soil water holding capacity increased
4. Biodiversity outcomes enhanced
5. More carbon sequestered than emitted

The 50 ha designated areas on each of the selected farms will provide on-ground proof of resilient agricultural production, active soil-building, carbon sequestration, biodiversity enhancement, improvements to landscape function and aesthetic benefits of yearlong green farming techniques.

Term

It is proposed Green Agriculture Stewardship Scheme operate for five (5) years

Distribution

At least 40% of GAIN sites will be located in the Murray Darling Basin, providing financial incentive for landholders to implement resilient dryland cover cropping techniques on previously irrigated land. The remaining sites will be allocated strategically in agricultural regions across temperate arable zones of Western Australia, South Australia, Tasmania, Victoria, New South Wales and Queensland. Strategic site selection will maximise the benefits achieved from the funds invested.

Implementation

The proposed Green Agriculture Stewardship Scheme will be implemented by a highly professional team of experienced on-ground agricultural advisers coordinated by Dr Christine Jones, CEO, Australian Soil Carbon Accreditation Scheme (www.amazingcarbon.com) and founder of the Green Agriculture Innovation Awards (section 5).

Dr Jones is currently working with a wide cross-section of Australian landholders (Appendix C) to implement yearlong green, highly productive approaches to land management that confer resilience in a warming, drying environment, while reversing the farm sector's carbon and nitrogen footprints.

5. Green Agriculture Innovation Awards

Funding for a prestigious $25,000 pa Green Agriculture Innovation Award to run concurrently with the Green Agriculture Stewardship Scheme has been sourced from a philanthropic trust.

The Australian Farm Journal will be media sponsor for this award, assigning a specialist journalist to prepare in-depth articles and publicise case studies throughout the year.

The Green Agriculture Innovation Award will provide further impetus for innovation, rapid dissemination and widespread adoption of yearlong green agriculture technologies.

Presentation of the inaugural Green Agriculture Innovation Award will take place during the National Business Leaders Forum in the Great Hall of Parliament House, Canberra, on 28 May 2009.

6. Completing the carbon cycle - biological CCS

Carbon is the basic building block for life. It is only a pollutant when in excess in the atmosphere or dissolved in water. Over millennia a highly effective carbon cycle has evolved to capture, store, transfer, release and recapture biochemical energy in the form of carbon compounds. The health of the soil - and therefore the vitality of plants, animals and people, depends of the effective functioning of this cycle.

There is nothing intrinsically wrong with either coal or carbon. Coal began as plant biomass and is essentially biological in origin. All major greenhouse gases, including carbon dioxide, are cyclical. The issue is that too much CO2 is being emitted to the atmosphere and insufficient is being sequestered. A 'carbon pollution reduction' agenda might therefore include

i) 'completing the carbon cycle' through active biosequestration of emitted CO2 into soils, the planet's largest carbon sink, with a capacity five times greater than that of vegetation
ii) developing regional biofuel and biofertiliser capacity, reducing dependence on fossil fuels in the agricultural sector

Emissions trading, while useful to focus public and corporate attention on the need to reduce carbon pollution, cannot of itself have significant impact on global concentrations of atmospheric CO2. It could however, be beneficial, if the funds raised were used to restore balance to the climate by supporting natural carbon, nitrogen and water cycles, via the restoration of perennial groundcover. Economic development is only sustainable if it strengthens, rather than depletes, natural resources.

Recent research has confirmed that the capacity of the ocean to act as a carbon sink has markedly declined, with the top 100 metres of water being close to CO2 saturation. This finding highlights the urgent need for 'active drawdown' of excess CO2 already in the atmosphere, as well as reducing further emissions.

Biosequestration in soil offers a practical and almost immediately solution to legacy load CO2.

Managing agricultural soils to enhance their capacity to sequester and store large volumes of atmospheric CO2 in the form of stable humus also has significant implications for soil structure, water-holding capacity and nutrient status. These factors strongly influence resilience, productivity and profitability on-farm, with flow-on benefits for local communities, landscape function, human health and regional and national economies.

The diaries of the first European settlers report there were extensive tracts of perennial grasslands, shrublands and open grassy woodlands across the Australian continent in the early to mid 1800s. Even in the height of long dry summers, groundcover remained green. The demise of this productive yearlong green groundcover, with its ability to respond to rain at any time, can be linked to many of the 'problems' now facing the agricultural sector.

Periodically bare soils generally contain only half the organic carbon of similar soils in the same region under perennial cover (for example, see table over page). As a result they have poorer structure, lower soil water-holding capacity and reduced nutrient levels.

Low, normal and high ranges for average soil organic carbon levels (% by weight) in crop and pasture soils in low rainfall (< 500mm) and high rainfall (> 500mm) regions, Victoria

	Low rainfall (< 500 mm)		High rainfall (> 500 mm)	
	Crop	**Pasture**	**Crop**	**Pasture**
Low	0.9	1.7	1.45	<2.9
Normal	0.9 – 1.4	1.7 – 2.6	1.45 – 2.9	2.9 – 5.8
High	>1.45	>2.6	>2.9	>5.8

Source: Brown A.J., Fung K.K.H. and Peverill K.K.I. (1982) "A manual on the soil testing service provided by the Division of Agricultural Chemistry"

This historical decline in soil carbon has created a ready-made sink. The carbon loss could be reversed by the reinstatement of living groundcover.

The data in the above table indicate that a change from annual groundcover (soil bare in summer) to perennial groundcover (healthy living soils all year round), has the potential to increase soil carbon levels by around 1% in low rainfall regions and up to 3% in higher rainfall regions.

An increase of 1% in the level of soil carbon in the 0-30cm soil profile equates to sequestration of 154 tCO_2/ha if an average bulk density of 1.4 g/cm^3 is assumed, while an increase of 3% in the level of soil carbon equates to sequestration of 462 tCO_2/ha.

Innovative (frontier-type) land management technologies that promote soil building are more productive and less expensive than conventional farming practices that deplete soil carbon. When biology friendly fertilisers and continuous sequestration (via perennial cover cropping) are used in place of conventional fossil-fuel based fertilisers in traditional bare fallow systems, the carbon footprint is reversed (that is, more carbon is sequestered than emitted).

On average, 12 tonnes of topsoil are eroded for every tonne of wheat currently produced in Australia. Greater losses are experienced on more fragile soils. For example, over 200 tonnes of topsoil are eroded for each tonne of wheat produced in some parts of the Wimmera region in western Victoria.

No civilisation can survive the physical destruction of its primary resource base - the soil.

Regional biofuels and biofertiliser industries

Regional economies have become highly dependent on fossil fuels and fossil-fuel based fertilisers, herbicides and pesticides, the cost of which contribute significantly to lack of financial viability in the agricultural sector. In addition to the monetary, health and environmental costs of chemical use, the extraction, production, transport and application of these products is emission intensive.

Across Australia there are farmers already producing the same or better yields with markedly reduced reliance on fossil-fuel based chemicals. Biology-friendly farming technologies can reduce on-farm input costs as well as lowering the regional and national carbon footprint.

Longer term, improved capacity for regional biofuels (such as cellulosic ethanol and biodiesel) and more immediately, biofertiliser production, could improve local employment, reduce transport costs, significantly improve food quality and reduce greenhouse gas emissions, at minimal public cost.

The formation of new topsoil is a biological process. It cannot be achieved through the application of synthetic fertiliser, pesticides, fungicides or insecticides, all of which have negative impacts on soil life.

7. Project-based soil carbon offsets

A bonus $5 per tonne per annum for CO2 sequestered in the GAIN sites could be paid as an optional extension to the stewardship scheme. The bonus would be capped at 5 years, that is, a maximum of $25 per tonne for CO2 sequestered over the life of the project.

Baseline soil carbon levels would be determined in the first year and annually thereafter, providing a valuable Australia-wide database for rates of soil carbon sequestration under regenerative agricultural regimes.

Soil carbon bonus payments would provide incentive for best management. Additionally, the data would enable on-ground results and real-time assessment of the implications of a broader, project-based soil carbon offsets scheme. Such a scheme could play a vital role in emissions trading in the future.

Irrespective of whether global temperatures increase, decrease or stay the same, the implementation of a national policy for soil carbon restoration utilising funds derived from the CPRS would build 'real' wealth and ensure security of food and fresh water for the Australian nation.

The carbon cycle and water cycle are intrinsically linked

High soil carbon = improved water infiltration = recharge of transmissive aquifers = perennial base flow to rivers and streams.

Low soil carbon = high evaporation = loss of perennial streamflow

The longer we delay undertaking changes to land management, the more soil (and soil carbon and soil water) will be lost, exposing an increasingly fragile agricultural sector to escalating production risks and vulnerability to climatic extremes.

The future of Australia depends on the future of our soil.

8. Costings

i) Stewardship Payments

It is suggested the initial rollout be 20 sites in 2009, with another 30 added in 2010 and a further 50 in 2011, making a total of 100.

The Green Agriculture Stewardship Scheme would run for 5 years.

Stewardship payments would amount to

2009: 20 x $10,000 = $200,000
2010: 50 x $10,000 = $500,000
2011: 100 x $10,000 = $1,000,000
2012: 100 x $10,000 = $1,000,000
2013: 100 x $10,000 = $1,000,000

TOTAL: $3,700,000 ($3.7million)

Additional funds for project coordination, measurement of nutrient levels in farm produce, soil moisture, soil carbon and biodiversity monitoring, travel and administration would also need to be negotiated.

ii) Project based soil carbon offsets

Optional 'add-on' to the stewardship scheme: a bonus annual payment of $5/t CO_2 sequestered.

Assume 10tCO_2/ha/yr x 50 ha x 100 GAIN sites = 50,000tCO_2 pa @ $5/t = $250,000 pa

For five years = $1,250,000 ($1.25 million)

iii) Cost of doing nothing

The number of farmers has fallen 30 per cent in the last 20 years, with more than 10,000 farming families leaving the agricultural sector in the last five years alone. This decline is ongoing. There is also a reluctance on the part of young people to return to the land, indicative of the poor image and low income-earning potential of current farming practices.

Consider the cost of **not** assisting farmers with the implementation of regenerative land management technologies. The impact of deteriorating soils on food quality and human health (Appendix A), the rising input costs for fuel and fertiliser to prop up failing land management regimes, ongoing agricultural emissions, continued drying out of soils due to low carbon levels and low-moisture holding capacity, reduced resilience to climatic extremes.

The long-term cost of inaction for the Australian nation is inestimable.

8. APPENDICES

Appendix A: Farming and health

The best national health policy is good agricultural policy.

The key purpose of farming is - or should be - to produce nutritious food that benefits the health and well-being of the population.

In reality, the farming sector sits at the centre of a complex, capital intensive supply chain focussed largely on production. Decisions are based on the cost of inputs and the anticipated value of outputs. Rarely is the nutritional value of the product considered. The health dimension has tended be viewed as a technical problem that can be fixed by pharmacological magic bullets.

Interestingly, when people are asked which factors are of greatest importance to them personally, good health nearly always tops the list. **Contrary to popular belief, good health is not determined by the quality of our medical system**. Rather, it is closely linked to the nutrient content of food - which in turn is linked to the ecological health and organic carbon content of the soil in which food is grown.

Soil health and human health are more deeply connected than many people realise. Food is often viewed in terms of quantity available, hence 'food scarcity' is not seen as an issue in Australia. However, food produced from depleted soils does not contain the essential trace minerals required for the effective functioning of our immune systems.

The nutritional status of soils, plants, animals and people has fallen dramatically in the last 50 years, due to losses in soil carbon, the key driver for soil nutrient cycles. Soil carbon levels in turn are linked to the quality of groundcover.

Routine premature deaths by degenerative conditions such as cardiovascular disease and cancer have become prominent when they were once relatively uncommon. The cancer rate, for example, has increased from approximately 1 in 100, fifty years ago, to almost 1 in 2 today. The effectiveness of the human immune system has been severely compromised by increased exposure to more and more chemicals coupled with insufficient mineral density in food.

This situation can be dramatically improved by the integration of perennial groundcover into agricultural production systems, reducing the need for chemical inputs and increasing the nutritive value of the food produced.

Appendix B: Mycorrhizal fungi

Soil benefits in many ways from the presence of living plants year-round, due to reduced erosion, buffered temperatures, enhanced infiltration and markedly improved habitat for soil biota. Significantly, it is **not** 'biomass' per se which is the driver for soil carbon sequestration, but the **soil life** that the biomass supports, via photosynthetic capacity.

Mycorrhizal fungi differ quite significantly from decomposer type microbes in that they acquire their energy in a liquid form, as soluble carbon directly from actively growing plant roots. By this process they are actively drawing down atmospheric carbon and turning it into humus, often quite deep in the soil profile, where it is protected from oxidation.

Where mycorrhizae are functioning efficiently, 40-60% of the carbon fixed in green leaves can be channelled directly into soil as soluble carbon, where it is rapidly polymerised with minerals and nitrogen and converted to stable humic compounds in the soil food-web. The humates formed by soil biota are high molecular weight gel-like substances that hold between four and twenty times their own weight in water. Humic substances significantly improve soil structure, porosity, cation exchange capacity and plant growth.

Mycorrhizal fungi access and transport nutrients such as phosphorus, zinc and nitrogen in exchange for carbon from their living host. Plant growth is usually higher in the presence of mycorrhizal fungi than in their absence. In perennial grasslands, mycorrhizal fungi form extended networks that take several years to develop. They have mechanisms that enable them to survive while host plants are dormant but **cannot survive** if host plants are completely removed from the ecosystem.

Under appropriately managed perennial groundcover, soil water balance is improved by hydraulic lift and hydraulic redistribution in seasonally dry environments. These processes bring moisture to the root-zone that would not be available to an annual crop or pasture.

Broadacre cropping could benefit enormously from widely spaced rows or clumps of long-lived perennial grasses and fodder shrubs. As yet we do not know the required critical mass to restore soil ecosystem function, but it might only need to be 5-10% perennial cover. The benefit of permanent mycelial networks in terms of aggregate stability, porosity, improved soil water holding capacity, reduced erosivity and enhanced nutrient availability would be immense.

Where soil carbon is mycorrhizal in origin it is **stable**, which is vitally important in the current debate about soil carbon losses during droughts and fires. The stabilising humification process can also be enhanced via additions of certain humic materials (often included in biology-friendly fertilisers), which have a protective effect on soluble carbon exuded by plant roots.

Appendix C: Current workshop program, regenerative land management

Workshop fliers and copies of notes available on request.

Dalby QLD - 2 & 3 February 2009. North-East Downs Landcare Group. Building soil carbon with yearlong green agriculture
Yarraman QLD - 4 & 5 February 2009. North-East Downs Landcare Group. Building soil carbon with yearlong green agriculture
Benalla VIC - 26 February 2009. Federation of Biological Farmers. Convention or innovation? Victorian landscapes, past, present and future
Mt Barker WA - 17 March 2009. Evergreen Farming Group. Carbon for many reasons
Dongara WA - 19 March 2009. Evergreen Farming Group. Carbon for many reasons
Karuah NSW - 7 April 2009. Manning Landcare. Soil carbon sequestration
Markwell NSW - 8 April 2009. Manning Landcare. Soil carbon sequestration
Wollongong NSW - 15 April 2009. Presentation to Southern Rivers CMA Board
Bega NSW - 17 April 2009. South Coast Soils Group. Redesigning agriculture
Corryong VIC - 21 April 2009. Upper Murray Landcare. Building soil carbon
Canberra ACT - 28 & 29 May 2009. National Business Leaders Forum, Parliament House. Participation in soil carbon speaker panel. Presentation of inaugural Green Agriculture Innovation Award.
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Recent publicity

ABC Landline, 17 February 2009 'Ground Control' (story on Australian Soil Carbon Accreditation Scheme) http://www.abc.net.au/landline/content/2008/s2490568.htm

The LAND, 19 March 2009 'Soil carbon doubts unfounded'
http://theland.farmonline.com.au/news/nationalrural/agribusiness-and-general/general/soil-carbon-doubts-unfounded/1465172.aspx?src=enews