



Hawke's Bay vineyard

Living Off The Land

By Tom Belford

Whenever the overall prosperity and growth potential of the Bay's economy is discussed, much of the attention focuses on the farming sector. Observers say that agricultural activities of all kinds, including food processing and specialised service providers, account for 40% or so of HB's economic output and for about 17% of its employment.

But what actually constitutes this 40% and what is the future prognosis for the farm sector? If Hawke's Bay's growth is so tied to agriculture, how confident should we be about the future? What factors support an optimistic assessment; what factors suggest risk or vulnerability?

An optimistic view of our region's land-based economic future is illustrated by the mission statement put forward by the Hastings District in its LTCCP: "Hastings District will be the premier land based production region of the South Pacific." A high aspiration indeed.

But some would offer a less rosy view that takes into account adverse factors ranging from increasing drought, problematic water supply, and depleting soil, to trade barriers, R&D and skill shortages, and foreign consumer resistance to long distance food sources.

And here, from an analysis prepared for the HB Regional Council, is a middle ground forecast: "With its natural endowments Hawke's Bay is well positioned to capitalise on the growing world demand for high quality food, especially from the expanding middle class in Asia. As a consequence the region has the potential to outperform the national economy and grow at 2.8% or thereabouts from 2011 onwards. However, the weather is the wild card and although our forecasts account for occasional

dry spells we are unable to predict when they will occur with any precision. The impact of climate change is also not clear and a drying of the east coast may eliminate Hawke's Bay's higher growth potential."

Who's right ... the optimist or the pessimist?

This article attempts a sort of "risk assessment" of the land-based economy of Hawke's Bay.

Start with the land

Perhaps the obvious place to begin is with the land itself -- on which all else depends --and what might threaten it.

Hawke's Bay consists of roughly 1.4 million hectares, of which nearly 1.3 million hectares are devoted to growing things, from sheep to trees and grapes. Pastures and forests consume the lion's share of the land, with orchards/ horticulture occupying only 21,000 hectares, and vineyards about 6,300 hectares.

Some believe the land itself is in serious jeopardy, threatened by inadequately constrained urban development, especially as growth infringes on the Heretaunga Plains. Certainly the recently-formed Land Protection Society holds that view, but the concern reaches far beyond that group. For example, reporting on responses to its questionnaire on future scenarios for the District, HDC notes that "Tightening land use rules to inhibit urban sprawl" was ratepayer's top concern.

Much of the productive land in the region lies within the Hastings District. And at the top of every recent list of strategic priorities issued by the Mayor and Council lately, you will find statements like these from the LTCCP: "Our immediate priority is to manage our plains resources and urban development

appropriately." Or: "Developing a new District Plan to preserve the productive capacity of the Heretaunga Plains is our immediate priority."

Just a week or so ago, the Governance Group consisting of mayors and councillors from the Hastings, Napier and Regional Councils met to approve a workplan for the so-called Heretaunga Plains Urban Development Study. Mayor Yule outlines his vision for the project in his Guest Buzzmaker article. Allan Baldock, in his article, explains the skeptical position of the Land Protection Society.

Watching the Hastings Council deal with land use issues lately in specific cases affecting Plains land -- from the sports park to retirement villages, big box stores to golf resorts -- one cannot see that the Council itself has yet discerned a consistent path.

Many eyes and expectations will be focused on this initiative. Arguably, no policy initiative will have more impact on the Bay's land-based economy, since obviously the land itself is a finite resource and its productive acreage represents the ultimate constraint on agricultural growth.

Declining soil quality?

But protecting the land, the 'golden goose' of Hawke's Bay, from a regulatory standpoint is only part of the equation. Hugely important is protecting -- and many would argue, re-building -- the quality of the soil itself.

Hawke's Bay, obviously not alone in the world, has now had about sixty years of chemically-oriented farming. Within the last twenty years in New Zealand, our farmers have used 600% more urea, and their production has not lifted even 50% in that time. Meanwhile, the data indicate the vitamin and mineral content of our food has declined 60% in sixty years. Old-timers would say taste has suffered as well.

This hardly sounds like a viable long-term business model, let alone a sustainable approach to using the Bay's precious land resource. Nor have we even touched upon the impact of these practices on our water quality.

In their articles in this Digest, Phyllis Tichinin and Mark Sweet offer their critiques of the traditional chemical farming approach now dominant in Hawke's Bay. I won't repeat their analysis here. But they also point out a number of farmers and viticulturists who are taking alternative approaches based upon re-building the quality of the soil, even as it is used. Phyllis notes that approximately 40,000 hectares in Hawke's Bay are devoted to some form of "biological" farming. And Mark emphasizes an additional "windfall" benefit of soil restoration: because best soil practices involve restoring carbon content, they can actually open the door for farmers to earn carbon credits, as opposed adding to the nation's carbon emissions deficit.

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Be Poisoned and Die

By David Cranwell

As someone involved with the pip fruit industry for decades, I believe the industry has steadily evolved for the better.

The whole world is talking about sustainability. At times, I feel the producer is given a hard time by well-meaning individuals who have scant appreciation of the industry and the progress it has made over the last fifty years, especially in the area of chemical usage.

I grew up on a West Auckland orchard, The Delta, which was part of the original Pomaria estate. The land was originally purchased and planted by my great-grandfather from 1892 onwards.

The earliest memories I have of my parents orchard was of them telling us kids that we were never to turn on a tap in the orchard and drink from it as we would be poisoned and die! This for a young child of about 5 years certainly made an impression that I never forgot.

We were fascinated by these taps that were spread throughout the orchard, which Dad used to hook up long hoses to, and then drag them from tree to tree spraying them with a long-handled hand gun. The whole system was powered by an electric pump in the shed which pumped the spray through the lines at about 700kpi pressure through the 2.5cm pipes. Breakages at joints were not uncommon with spray forming little geysers within the orchard. The spray shed was an old tin lean-to with an earth floor and a door that was impossible to shut.

Poison was the operative word. Arsenate of lead the main insecticide, Bordeaux mix applied liberally and regularly until the trees were blue, DDT, DDD, Lindane and the Organophosphates were to follow. A tough arsenal, in the main applied with little personal understanding of their effects on or protection of the applicator.

The '60s saw a change from the grower beating enough bugs and diseases to get enough fruit to sell. As a result of an increasing national crop, the overseas marketplace became the focus for the bulk of the crop ... growers were venturing on a journey of meeting the market.

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FROM THE EDITOR

Tom Belford



Perhaps no land in Hawke's Bay holds more unique economic value than the 30,000 hectares of the Heretaunga Plains. Consequently, its use has been increasingly fiercely contested, right through to the Environment Court.

As Mayor Yule observes in his Guest Buzzmaker column, many of the most contentious land use issues in the Bay – the Sports Park, the Havelock North retirement village, the Bunnings development in Hastings, the various golf course developments, as well as the Northern Arterial Road – have revolved around the use the Plains and its valuable soil.

Resolving these issues in a systematic way that is future-oriented, sustainable in all aspects, and responsive to multiple constituencies is the goal of the Heretaunga Plains Urban Development Study (HPUDS), a new collaborative initiative of the Hastings, Napier and Regional Councils.

This is a hugely important project, which Mayor Yule hopes can be completed in little over a year from now. To the Hawke's Bay Fruitgrowers, with their obvious stake in how Plains soils are used and protected, it is in fact the most important activity presented in the Hastings LTCCP. Mayor Arnott and Chairman Alan Dick of the Regional Council are firmly committed to the initiative.

Some stakeholders are skeptical of the process, as indicated in Alan Baldock's article on behalf of the Land Protection Society. And Kevin Trerise, in his article, presses for a sustainable HPUDS. Clearly, many eyes are upon it... some wary, some hopeful. The elected leaders constituting the project's Governance Committee have yet to spell out precisely when and how this planning process will involve the public and key stakeholders, and how open the exercise will be in terms of meetings, minutes, documents and so forth.

Uniquely important as the Plains land is, it represents only a bit more than 2.5% of all land

in the Bay devoted to growing things ... from trees to sheep to grapes and onions.

And that bigger picture – the entire land-based economy of Hawke's Bay – is the focus of this edition of **BayBuzz Digest**. Our various writers examine its challenges and resilience.

David Cranwell in *Be Poisoned and Die!* describes how growing practices have become more science-based and environmentally appropriate. But Phyllis Tichinin in *Better Farming Through Chemistry?* and Mark Sweet in *Farming Carbon* argue that the Bay's soils have been degraded by sixty years of chemical farming.

In my article, *Living Off The Land*, the key factors that bear on the future viability of the Bay's land economy are examined: protecting the amount and quality of the land, addressing water availability and quality, adapting to climate change, nurturing new talent and innovation, overcoming trade barriers by any name, and strengthening the "Clean, Green" New Zealand brand.

To provide even more depth, we've included a few "sidebars" with the primary facts about the Bay's land economy, the role our Bay councils can play in supporting it, and the fascinating science of the soil.

In our Arts & Lifestyle pages, art aficionado Roy Dunningham reviews **The Labours of Herakles**, an exhibition by Marian Maguire now at the Hastings City Art Gallery. Filmmaker Bridget Sutherland discusses the work of artists from Mosaic Creative Space in Taradale. And Brooks Belford talks to textile artist Clare Plug about her **Look South** exhibition at Hawke's Bay Museum and Art Gallery.

And finally Tim Gilbertson ventilates this month on council amalgamation.

Enjoy this month's edition. And don't forget, it's all available online at www.baybuzz.co.nz

What Others Say:

**Barbara Arnott
Mayor, Napier**

I expect the Study to achieve:

- Identification of needs associated with growth in the area;
- Surety of a framework to work within for the whole community;
- Protection of identified special feature areas (rural, historic, agricultural, high density etc);
- Create a consistent data set that can be used across the Heretaunga Plains when assessing or building infrastructure.

**Alan Dick
Chairman, HB Regional Council**

The end result of the Urban Growth Study (after considerable engagement and full consultation) should provide a blueprint and certainty for the whole and individual communities on where and how we should live, provide the infrastructure for industry and commerce, and hopefully resolve the serious conflicts and competing land uses over the whole of the Heretaunga Plains.

It should also do so with an underpinning of the fundamental principle of sustainability – that we leave our resources in at least as good condition for future generations ... ideally in much better condition, given the acknowledged pressures on quality and quantity of water, and actual and potential degradation of productive land.

**Paul Paynter
Orchardist, Yummyfruit**

The HPUDS needs to be visionary. The 'safe' approach of many consultants is to extrapolate historic trends in a linear fashion. The future will be different to the past, but few are courageous enough to make planning decisions on this basis.

For example, policies with regard to land use like "To minimise the expansion of urban activity onto the versatile soils of the Heretaunga Plains" are excellent; yet we're not quite seeing the reality. The Brookvale subdivision is on poor soils and an excellent location for housing. Conversely, Lyndhurst is located on some of the greatest soils in the world and is a poor use of Hawke's Bay's uniquely productive resources.

A fresh look at these matters is overdue and the collective regional approach is encouraging. Participants should bear in mind that we have just lived through a 25 year period of sustained economic expansion, the likes of which the world has never before seen. History indicates that these types of events are usually followed by a lengthy period of consolidation. I suspect we are living through a significant economic paradigm shift, which will present a future that is both challenging and different. "More of the same" is not what is required from our planners.

**Chris Ryan
Retired Orchardist**

I would like to see real community involvement in achieving a blueprint for the best use of our natural resources. This means using the wide range of local expertise in land use, science, transport and the many other skills needed to get the results our sustainable future requires.

I would like to see:

- A complete mapping and categorisation of all our soils on the Heretaunga Plains and adjacent river valleys;
- An estimate of the potential range and quantity of food that can be produced. How much of our food can be produced in Hawke's Bay?
- Recommendations on land use to prevent unnecessary pollution of our rivers;
- Identify and protect our special natural features from development – e.g., make the Cape and Ocean Beach area a regional or national park;
- Identify a range of possible areas for urban development, but use far greater imagination in design, and to meet the varied requirements of people;
- Avoid using our best soils for industrial, commercial and any other purpose that does not require those soils.

**Diane Vesty
Hawke's Bay Fruitgrowers**

The Heretaunga Plains Urban Development Strategy is... the most important activity to be carried out in the plan.

We encourage District and Regional Councils to work closer together and wish to see a Plains Zone commercial land user group formed to be formally consulted on issues including potential new rules, obligations, national standards that are likely to be imposed and affect commercial land users, discussing strategic plans on how the land will be used, boundaries for zones, and what the region needs from a commercial sense, for example roading and infrastructure ... This group could also contribute to planning economic sustainability for the district in the formation of an alternative land use plan.

Ideally, the vision for Hastings lifestyle is about vibrant and entertaining central business areas which are compact and where people feel safe, coupled with easy access to recreational activities and to the surrounding rural area and healthy fresh product it has to offer. To mitigate pressure on plains zoned land, we need to make our cities and suburbs the lifestyle choice for those coming to the area to live, and this can only be achieved with great urban design.

As we look to the future and plan for growth it is important that we determine the actual amount of land required for industrial purposes. We need to ask the question: Are we an industrial centre or do we wish to maintain the proudly provincial aspect of our unique city?

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GUEST BUZZMAKER

Mayor Lawrence Yule

Our Land, Our Economy and Our Future

The Heretaunga Plains, and the water beneath them, form the basis for a significant chunk of the Hawke's Bay economy. Our climate, old river beds and former swamps provide rich growing conditions which would be hard to replicate anywhere in the world. The quality varies, but these flat soils cover around 30,000 hectares. At the current rate of urban expansion, we will use up around 1% of this land in the next 100 years.

I see the managing of this resource as the most significant challenge facing the Hastings District Council, Napier City Council and the Hawke's Bay Regional Council. It's more complex than managing our water resources, because unlike water, people own the land they live and work on. They have title to it and they use it how they see fit.

With ownership comes a right of say, and a complicated set of issues around its value.

You don't have to think back too far to remember various attempts to manage the conflicting land use issues on the plains. The Hawke's Bay County Council fought to protect our soil resource at all costs. To subdivide, you had to prove you could make a living of the subdivided land. This involved consultants in preparation of plans to prove subdivision was economically viable. Some succeeded, some failed. Most of the planned uses only lasted for a year or two and the land was then essentially a lifestyle block.

The Hastings City Council developed and expanded Flaxmere (with support of the Hawke's Bay County Council) because it made sense for a dormitory suburb to be located on poor soils. In fact, the soils to the west of

Flaxmere were so poor they barely supported grass growth. With the advent of viticulture, this same land can produce some of the best red wine in the world, branded as Gimblett Gravels. Quite simply, the western part of Flaxmere was poorly planned on soils which, in retrospect, can extract significant value for our region.

The Hastings District combined the former plans of Hastings City Council, Havelock North Borough Council and Hawke's Bay County Council and put all the productive flat land together in a planning area referred to as the Plains Zone. This includes all the Heretaunga Plains as well as parts of the Dartmoor Valley, Puketapu, Te Hauke and coastal areas, such as the areas surrounding Haumoana and Te Awanga. Napier City on the other hand controls the fertile land around Meanee and Awatoto.

The Heretaunga Growth Strategy, currently being developed by Hastings, Napier and HB Regional Councils, is the first regional attempt to work out how we manage all the issues in a sustainable and integrated way. We have two cities twenty minutes apart surrounded by some of the best land in the world. How we manage this land is vitally important to our future.

The region also needs to actively grow our population. It is no secret our population is ageing and this needs to be offset by a positive and reasoned strategy to hold onto our existing residents and attract new migrants. It's vital we allow for growth - developing housing, roads, water and infrastructure for business.

But the Plan is also very "permissive" in its approach to developments in the Plains Zone. This has allowed over time a number of activities that could be considered marginal for establishing in the Plains area. And along with new roads and a thriving economy, extra demands have been placed on Council for consents to establish activities that might be better directed to other zones.

Alarm bells

Alarm bells first rang when it was suggested that a "big box" retail development could be located in the Plains Zone. It is of note that Mayor Yule stated that the Council did not want this to occur.

The Council's Hearings Committee also turned down a number of applications that were challenging the integrity of the District Plan when it came to the Plains Zone. The increase in applications aroused the interest of more and more ratepayers, with many becoming concerned with where things were heading.

Other District Plans, for example Tasman District, appear to have a much more robust approach when considering the importance of the soils in their area. With Hastings and Hawke's Bay being so reliant on the primary sector, one would think our District Plan would lead the way in championing our fertile soils. It should be paramount to hold our precious resources in the highest regard.

Napier is a seaside city that can accommodate growth via high density apartment living on attractive locations overlooking the sea and via new less fertile land lifted in the 1931 earthquake.

Hastings, on the other hand, is essentially a beautiful market town built on an old swamp with a railway line establishing its position. It provides the business hub for the region and services thriving agricultural and horticultural sectors. There is little demand for high density residential housing, with the exception of Havelock North. Surrounding these two cities are proud communities such as Clive, Haumoana, Te Awanga, and Bayview.

What are the challenges?

1. Community perceptions have changed. There is now a significant community interest in landscape values. The less productive hills around the plains are valued for their landscapes and it's now more difficult to build there. So, if we want to protect the fertile land on the plains and the landscape values of the hills, the options for development are limited.

2. The land ownership is fragmented, with hundreds of small titles too small for traditional horticultural use. They might be used for horticulture currently, but can easily be converted into lifestyle blocks.

3. Primary production is full of economic uncertainty. Boom-or-bust patterns are common. In reality most producers rely on a combination of equity growth in their land to offset modest cash surpluses from growing produce. Adverse climatic and economic events often result in requests from growers to subdivide off low-priority assets, like houses, in an effort to retain the income generating capacity of their core business.

4. Industry requirements keep changing. The apple industry required packhouses on orchards less than fifteen years ago. Now most packing facilities have been centralised. Some of this centralisation has occurred on industrial land, while some has occurred on the good quality plains-zoned land. The wine industry required vertical integration from growing to sales. This allows for wineries and restaurants to be built where the grapes are grown.

5. Any residential, commercial or industrial zonings must make sense from an infrastructure perspective. Generally, we have plenty of clean water. We have geographic challenges in stormwater disposal in Napier, and into the catchments of the Karamu Stream. Wastewater reticulation is very expensive and there are significant economies of scale in clustering housing. It is possible to engineer anything from single home infrastructure packages to multimillion-dollar schemes, but the economic costs of these must make sense.

6. Climate Change requires a new approach to planning around coastlines and waterways.

A lot of the debate around the Sports Park, the Havelock North retirement village, the Bunnings development in Hastings and the various golf course developments straddle all of these issues. In the many discussions I have had on these issues, I ask the same question: "What is your solution?"

Do we draw a line in the sand? Ban certain activities in certain areas? Shift residential development to lower-value land kilometres away from existing infrastructure? Only allow growth on poor quality soils? Shift all residential growth to Havelock North, Clive or Bayview?

The response is the same. Few people have an answer.

We already have a successful Regional Transport Plan. The Heretaunga Plains Urban Growth Strategy is our first regional attempt to develop a plan to address land use issues regionally. My personal aim is to collectively work towards a single District Plan that is well thought out, sustainable and agreed.

Getting there will involve plenty of interaction and meaningful consultation with key players and the community. There has never been a better opportunity to sort these issues - our only constraint is what we currently know. We have a chance to significantly influence the shape of the Heretaunga Plains for the next 50 years.

It is our future and your chance.

Allan Baldock Land Protection Society



Land Protection Society – Why?

The Land Protection Society has members across the spectrum - retirees, growers, retired farmers, business operators and city people - who share concerns about the loss of one of the major resources we are lucky to have in Hawke's Bay. The newly-formed Society was created to coalesce three small groups all acting over these concerns.

The Heretaunga Plains are a significant land asset containing some 65 soil types. And they lie over another major resource, artesian water, that gives us the ability to utilize our land to major benefit for the region and nationally. The Hastings District Plan recognizes these assets, along with our fantastic climate, and notes the importance of them to the economic well-being of Hastings.

Our planning documents should back up the District Plan's explanation of the importance of the Plains resource with rules that back up that importance. The Regional Resource Management Plan and Regional Policy Statement are also sadly lacking when it comes to providing guidance on our soil resource.

Plains soils allow a wide range of crops to be grown, both permanent and long term with apples and stonefruit, but also with cropping, which underpins the presence of processing factories.

Varying soil types and micro-climates allow for a range of grape varieties and there is also a mixture of minor crops such as blueberries, limes, saphron etc.

This is all made possible by a favourable mix of soils, climate and available water.

Who would jeopardize this mix, which is rare in New Zealand and covers an area that is small in comparison to the total land area of New Zealand?

Then came the sports park

The Hastings Council proposal for a Sports Park on Percival Rd was the catalyst for the Society to express major concerns about the loss of a large slice of prime land.

Most concerning was that the location such that it would invite the demise of a large

block of land with some of the highest class soils on the Plains. Class 1&2 soils are a finite resource in NZ. For a Council itself to propose development on these soils was unbelievable. This from a Council who said they did not want "big box" development in the Plains Zone!

The fact that the athletics track was built without a publicly notified consent was unacceptable. The arguments about the referendum do not wash. The fact that so much of a finite resource was proposed to be lost was enough reason, under the RMA, to require notification. Up front and accountable is how a Council should be.

The Society, aims to bring attention to the loss of such a valuable resource and to ensure the District Plan is robust in protecting the Plains Zone. Speaking to many soil experts over the last few months has underlined to me that the Society is on the right track, and they fully support us.

The Society has a narrow focus, but the ramifications of losing our land resource in an ad-hoc, piecemeal way are far too serious for the future of our economy and Hawke's Bay. Our members are strongly resolved to see common sense prevail.

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Phyllis Tichinin
 Consultant and Farmer
 Abron Living Soil Solutions



Better Farming Through Chemistry?



Mid-winter growth, Plantation Road Dairies, CHB

Forty percent of the economy of Hawke's Bay is based around agricultural production. But agriculture is (deservedly) getting a bad rap these days. We are contributing to fertiliser and pesticide pollution of water, and aquifer drawdown. We're burning up soil carbon and contributing to green house gases. Production seems to be slipping compared to inputs, and the quality and flavour of what we produce has declined. Some of the current ideas for solving these problems are pretty dire, including limits on fertiliser applications and carbon taxes for farms.

How did we get to this state of environmental degradation in agriculture?

Much of it comes from the historic view that growing crops is a matter of putting water soluble chemicals (urea, super phosphate,

etc) on an inert medium (the soil) in order to grow maximum carbohydrate (our food). This approach surfaced after WWI and again after WWII based on the, even then outdated, theory of German chemist Justus von Liebig that plants only need N, P and K to produce. This theory provided the handy rationale for using up the arsenal of nitrogen and potassium-based explosives and toxic chemicals post-war and continuing the munitions industry dominance in the economy.

All this "Better Living through Chemistry" has landed us in a bit of a mess. We have generally failed to sustain per hectare food production at the levels they were before WWII. Farmers' role in society has shifted from being the strong, intelligent backbone of the economy to a person who merely reads the label and applies. No wonder young people aren't interested in agriculture today. It's meant to be about growing things – nurturing plants and animals, but usually what we think of now as we get out of bed is "What do I need to kill today?"

We have a problem in our most important industry. Einstein said to solve a problem you can't use the same logic that created it. So where do we look for solutions?

Well, first off we need to understand the major flaw in von Liebig's theory of plant nutrition. What he didn't realise in 1870 was that trace elements, calcium and microbes play a critical role in the production of healthy plants. We need to update our understanding of agriculture to include the micro-biology of the soil. Thus, *Biological Agriculture*, which provides a wholistic view of the soil and plant ecosystem, including complex mineral relationships, energy flow between soil and plant and the wondrous abilities of microbes to produce stunning quality yields.



Kevin Davidson maize crop (untreated roots on left)

Appreciate the soil

We need a new appreciation of soil because we are not standing on dirt – we're standing on the roof of another world. Trillions of microbes should exist in a spadeful of healthy soil. They are the willing workers that produce vitamins and enzymes, chelate minerals and fight off disease organisms to support the plants they associate with. In a teaspoon of truly alive fertile soil there can be 25,000 different kinds of microbes, totaling 4–6 billion organisms. It is truly another world and one on which we are dependent for our air and food.

In Hawke's Bay we have a tremendous climate and soils capable of producing quality fruit, wine, meat and vegetables for gourmet and health-conscious palates. We have the infrastructure in place for harvesting, processing and exporting to international markets which are increasingly aware of the value of flavourful, nutritionally-dense produce. International markets increasingly demand premier quality and over the last few years that has come to mean more than fruit appearance. It now means high antioxidant levels, complex flavour profiles, long storage, no pesticide use, traceability and social and environmental sensitivity.

Councils' Role: Education

District and regional councils are taking an active role in shaping our environment, and agriculture is so closely linked to our environment in Hawke's Bay. Biological farming can rapidly address many of our environmental challenges like water quality, soil collapse and nitrate and phosphate leachate.

To facilitate environmental regeneration with biological farming, our Councils could focus on farmer education. Farmers are stewards of our most precious resource – the soil upon which our lives depend. The soils are the lungs and stomach of the planet and farmers need to be aware of the crucial role they play in environmental quality. As this year's theme of the Mystery Creek Fielddays highlights.... "My Land, Our Environment."

Farmers need to be helped to understand the need for mineral balance and microbial diversity in their soils. Councils could assist them to understand the concepts of biodiversity and soil microbial integrity. Seminars on prompting soil humus formation could explain the need for regular application of lime, traces and humates. There are clear links between the nutritional density of grass and animal health, worm burdens and reproduction. Farmers need to be made aware of how to reduce drenching through animal nutrition. Growers need to be aware that herbicide use suppresses soil microbes, and ways to promote, rather than destroy, bio-active soil carbon need to be explained.

Although progress has been made with some of these demands, closer inspection shows agriculture is on a downward trend with: collapsed soils requiring larger tractors; more fertiliser and water needed to grow the same crops; only modest reductions in pesticide use; increasing animal health costs; rot problems and mediocre taste levels. Fortunately, science can help us out with these problems. Problem is, it's not the conventional agricultural science of today.

The effects of chemical-oriented farming are all around us.

University of Waikato research has shown that the carbon and nitrogen levels of our soils have dropped massively in the last 20 years. We are now using 600% more urea in New Zealand than we did in 1990 (according to Stats NZ and MAF) and our production has not lifted even 50% in that time. Our animal health problems and costs are compounding, along with the time spent drenching, vaccinating and administering antibiotics. Despite some gains through IPM programs, pesticide use (which includes herbicides) in general, has increased. No pest species problems have been eliminated, while weed and insect resistance

Soil digestion of crop residue is key to humus creation and could be explained and encouraged.

Councils need to understand the sciences of soil management better themselves, so that they can direct staff and arrange education for farmers to promote soil regeneration in Hawke's Bay.

Sustainability is not good enough. Why would we want to "sustain" the practices which have gotten us into this environmental pickle? We need to practice regenerative biological farming, not sustain the status quo of chemical-oriented farming. Our soils, our health, our pocketbooks, our water and our air cannot sustain the continued damage of conventional approaches into the future. Positive, informed change needs to happen fast. This is where awareness of biological farming practices comes to the fore and where Councils could play an important role in education.

We have practices, now, which are reducing leachable fertiliser use, increasing soil carbon levels, increasing the soil's ability to hold water and reducing pesticide use. Farmers need to be helped to learn more about them. Rather than grapple with the problems of trying to regulate Superphosphate or urea use, Councils could be proactive in helping farmers to nurture soil processes better through biological farming so that fertilisers are used more effectively and water quality is improved. There is hope with biological farming as the foundation for environmental quality and regional prosperity.

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is on the rise. There are only a few rivers in New Zealand that remain safe to drink from or swim in. The quality of what we grow has declined and if you need convincing on this point – compare the taste of a store-bought tomato with a home-grown one, or ask someone over 60 what peaches used to taste like. Chemical oriented agriculture has also created serious health problems associated with pesticide exposure, including Parkinson's, non-Hodgkin's Lymphoma, liver failure and birth defects. And, the energy footprint for agricultural fertilisers and pesticides is huge. When you add the climate change issue and the bad press agriculture is getting for greenhouse gas emissions, it's a depressing picture, indeed. It doesn't have to be this way.

Biological farming

Biological farming provides the model for a new conventional farming approach. It is a "best of both worlds" mix between conventional and organic farming practices involving careful monitoring of crops and soils to ensure production of the highest quality. We judge success in biological agriculture by the steadily increasing soil humus and the higher levels of nutrient density in the crops produced. While organic certification can certainly fit within a biological approach, biological agriculture has a proactive, rather than restrictive, way of addressing the root causes of insects, diseases and weeds. There is a bigger toolbox with biological agriculture. Farmers are empowered with understanding and can once again enjoy creating food for people.

With biological farming we can create fertile soils while growing tasty, nutrient-dense produce with less fertiliser and eventually no pesticides. In fact, it's happening now in Hawke's Bay under the Abron biological agriculture program. Dairies, vineyards, horticultural crops and pastoral farms are using less urea, more sophisticated soil amendments and thinking "bio-diversity and looking after soil microbes" in all farming decisions.

As a result farmers are seeing more worms and greater rooting depths, higher sugar and mineral content in their grass and better yields. They're also getting better animal health and using less pesticide. To top this, they are even doing what was once thought to be impossible – they are quickly sequestering carbon in their soils. Abron growers are taking a new view of their own family health and becoming proactive about food choices. They are realizing that soil health determines human health – the two cannot be separated. What we do to the soil determines the vitamin and mineral content of what we eat and the nutritional density of what we eat determines all aspects of our health. Biological farming involves some shifts in thinking and a willingness to accept that we haven't had the whole story when it comes to producing truly good food with quality environmental outcomes.

The future

Hawke's Bay is potentially the epicenter of biological farming in New Zealand. There are approximately 40,000 hectares under some form of biological program in the Bay. Large cropping farmers are beginning to grow squash, tomatoes, maize and onions biologically. Vineyards such as Tuki in Havelock North are taking out medals for superb vintages. Villa Maria is developing its expertise in biological wine growing.

Dairy farmers indicate that close to half of the Hawke's Bay dairy production is fertilised biologically. Kevin Davidson, of Plantation Road Dairies in OngaOnga, reversed a three-year decline in milk production and won Regional Dairy Manager with his first year



Hamish Galloway – 12 Brix dairy grass

of biological dairying. Cropping farmers are experiencing increased yields and improved soil structure. Pastoral farmers are seeing their pastures hold on longer and their grass sugar levels rise, providing feed with more energy for animals that finish extremely well. The Galloway family of Takapau has experienced massive changes in soil structure, positive shifts in pasture composition and palatability, with crop yields 75% above the district average within the first year on an Abron program.

These clear benefits are nearly overshadowed by the potential for income from soil carbon credits and premiums from organized marketing of certified nutritionally-dense produce. Both of these initiatives are being developed from Hawke's Bay by Abron Living Soil Solutions and will provide tremendous profit opportunities for farmers who can meet the performance and quality standards.

New Zealand, and Hawke's Bay in particular, has a tremendous international opportunity to create a point of difference with our biologically grown, premium quality, high brix produce. The market demand for verifiable nutrient quality in food is growing. We can improve soil quality while providing real solutions to climate change and the environmental challenges of fertiliser leaching into our streams and rivers.

Biological agriculture is a comprehensive, natural science approach that answers the issues vexing our environment and economy. Learn all you can about it ...it is the farming of the future. Biological farming principles emphasize the importance of educating farmers so they know how their soil capital asset functions and how to grow its worth. After all – farm soils are our prime planetary capital asset and source of our income and ultimately, our health.

Humus – The Miracle Ingredient

The most crucial aspect of biological farming is the creation of humus. Humus is the dark brown, biologically rich earth that healthy soil microbes create. It improves soil water holding capacity, provides a home for microbes and a savings account for soil nutrients. Without humus we have degraded soil that cannot support healthy plants. Building humus in our soils results in long term carbon storage in the soil. We know we're doing the right thing by our soils and our pocketbooks when we are "growing" humus and actively sequestering bio carbon with our agricultural practices.

The other measure of success for biological farming is nutrient density – high levels of complex vitamins, minerals and plant metabolites in the food we produce for people to eat. We use the Brix meter in the field to test plant sugar levels. The Brix, or percentage sugar of the sap, tells us whether the plant's photosynthesis factory is working to full capacity. Full functioning can only happen when all the mineral and enzyme building blocks are available to manufacture carbohydrates (sugars) for plant growth. Generally, the higher the Brix level, the higher the plant mineral levels and in turn the healthier the plant. A brix level of 12 or above indicates a healthy plant. High brix plants are not as susceptible to disease and insect attack resulting in cost savings in chemicals as well as an increase in production.

By combining an understanding of soil chemistry, physics and microbiology with sound farm management practices, we address and solve weed, disease, and insect problems at their root causes, rather than masking the symptoms with pesticides. The approach emphasizes application of calcium, trace elements and humic acids that feed soil microbes. Research indicates that the calcium in lime stimulates microbes, earthworms and root growth. Better till, better grass growth and healthier animals result from more calcium being available in the soil.

It is the soil microbes that do the work of digestion and bringing food and water to the plant. They also create enzymes, vitamins and even antibiotics to assist their host plant to be healthy. This is a mutually beneficial relationship with the microbes helping the plant and the plant feeding sugars to the microbes through its roots. A strong diverse community of beneficial microbes around plant roots can depress or kill disease bearing microbes. It's an amazingly complex set up and is the

basis of all plant health, nutrient density and humus formation. Ultimately it's the basis of our human health as well. The nutritional quality of what we eat determines our health and resistance to diseases. From food grown biologically with the help of soil microbes, we get better levels of nutrition.

Under a biological approach we work to improve the soil mineral balance for the long term as well as for this year's crop growth. The emphasis is on making calcium more available along with trace elements and crucial plant nutrients like phosphorus. Many New Zealand pastoral farmers are sitting on a huge reserve of phosphorus that has been applied over the years as Superphosphate. Unfortunately, a large portion of this phosphorus is locked up with soil iron, aluminum and calcium. Did you know that within days, as much as 80% of superphosphate fertiliser applied is tied-up and unavailable?

The most effective way to access this frozen bank account of vital phosphorous is through biological activation of your soil. There are many creatures in a diverse and healthy soil microbe community dedicated to the release of locked-up phosphate. New Zealand farmers have the exciting opportunity of harnessing soil organisms to improve available phosphate levels. The cornerstones of a biological approach are making phosphorus and calcium available to the plant and reinstating soil fertility through nurturing beneficial soil microbes.

Soil microbes digest organic matter, unlock minerals and provide nutrients for their host plant. The outcome of these processes is humus formation and an improved soil asset for farmers. Humus and humic acids play a crucial role in holding fertilisers in the root zone, reducing fertiliser leaching and decreasing the amount of fertiliser needed to grow quality crops.

The goal is to create maximum biodiversity and resilience in our soils. This is not accomplished quickly by single silver bullet products. Biodiversity is complexity and achieving it requires an understanding of the myriad relationships that govern soil chemistry, microbiology and physics. A full spectrum approach is needed: calcium, trace elements, bio-stimulants and microbe-friendly fertilisers including humic substances which buffer and feed. All this must be tempered by an understanding of the microbe community and a sound knowledge of agronomy.

Biological agriculture has a bigger tool box than certified organics. The major question we ask is "Does Nature approve?" Will this fertiliser or practice increase soil bio-integrity? The creation of humus and improving brix levels are the measuring sticks.



Don't let this opportunity go to waste

Economic prosperity in the last 20 years has increased average per capita income, but it has also dramatically increased the amount of waste. Waste is a significant risk to human health and the environment, and tangible evidence that we are making inefficient use of resources.

Product stewardship is a 'cradle to cradle' methodology that helps reduce the amount of waste created by encouraging better design and manufacture. It also facilitates efficient and effective resource use at the end of the product's life cycle.

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Mark Sweet
Columnist



Farming Carbon

Top priorities in Hastings District Council's *Planning for a Sustainable Future* are "protecting the productive capacity of the Heretaunga Plains soils" and "maintaining healthy soils."

Council's strategy for achieving those objectives is by "developing a new District Scheme, having greater interaction with stake holder groups on land use issues, and by forming a partnership with the Hawke's Bay Regional Council on the control and influence of agricultural practices."

Given Hastings District's rapacious consumption of rural land for housing subdivision in the last few years, and Council's taking of 30 hectares of prime Plains land for a sports park, it's easy to be skeptical of their sincerity, and assume they are simply jumping on the sustainability band wagon with fancy slogans, but no real resolve.

Let's hope they are serious about sustainable soil management, because enormous opportunity is at hand.

Research on organic apple and kiwifruit orchards in Bay of Plenty and Hawke's Bay has established that they store enough carbon in the soil to trade in the carbon markets.

Massey University PhD researcher Girija Page summarised her thesis as follows.

"I found that the organic orchard systems were sustainable in terms of energy use and most of the environmental impacts they had on the soil, water and atmosphere. In fact, they were a carbon sink, so they could potentially trade carbon credits under the Kyoto Protocol."

The potential for creating carbon credits embraces all farming where the soil is enriched rather than degraded.

Last year a group of Australian pastoral farmers received carbon credits for the soil growth they achieved, and sold them on the Chicago Carbon Exchange. They had increased soil carbon by 0.2% per year for the past decade.

If 0.2% annual increase in soil carbon were achieved over all of New Zealand's 13 million hectares of grassland alone, it would more than offset the CO2 emission for the entire country.

It's time to wake up and smell the grass ... and money ... which is, after all, the most trusted motivator in our culture.

Carbon is created in soil simply by increasing the organic matter present, and the opportunity before us is to double profit from natural (organic) farming practices, and the carbon markets.

The devastating effects of chemical agriculture on soil health have been known for years. The alternative organic/biodynamic/biological farming methods are proven to enhance soil health by increasing the carbon content, and in turn the biota mass of the soil.

There are more organisms in a teaspoon of soil than there are human beings on the planet!

Soil micro-organisms play an extensive role in the decomposition of organic matter and production of humus, cycling of nutrients and energy and elemental fixation, soil metabolism, and the production of compounds that cause soil aggregates to form. Many are in symbiotic relationships with plants and animals serving as nitrogen fixers and gut microbes. They function as an indispensable part of the food web. Our evolution as humans is intrinsically connected to the food web, and damage to the core of the web, which is the soil, inevitably damages us.

The organic producers and biological farming specialists in Hawke's Bay have always known this.

Local leaders

When the Hastings District Council partners with the Hawke's Bay Regional Council on the "control and influence of agricultural practices," let's hope they consult with the right people, and invite on board those local folk with proven experience in improving soil quality.

Hastings resident, Peter Proctor, should be top of the list. His work in India, which has seen tens of thousands of farmers change from chemical farming to biodynamics, is recognised internationally. As he told, *One Old Man and a Pile of Cow Dung* filmmaker Barbara Sumner Burstyn, India is suffering from incredible soil damage courtesy of the 1970's "green

revolution," when pesticides and herbicides were introduced en masse to the continent. "This was supposed to alleviate world hunger," Proctor explains, "Instead the massive chemical inputs destroyed millennia of balanced mixed cropping, soil and water tables, communities and individuals alike."

In supporting natural biological farming to India, Proctor said, "the people get it immediately. They need no convincing. They are living with the corporate destruction of their natural world everyday. But try convincing New Zealanders that we're causing irreparable damage to our ecosystems and our young people, and you meet a lot of resistance."

Another local man, Nick Pattison, is at the forefront of assisting farmers improving their soil quality. In partnership with BioAg, Australia, Nick is importing liquid biological cultures which feed the soil micro-organisms. Their approach – "farm the soil - feed the soil: the soil feeds the plants" – has met with outstanding success over the full scope of farming operations: orcharding, dairying, viticulture, and market gardening.

Another local whose expertise is widely respected is Nicole Masters of Integrity Soils, as is Phyllis Tichinin.

In Hawke's Bay, we also have the benefit of long-term biological growers with proven success. Clyde Potter's Epicurean Supplies is a model of organic vegetable production. John Bostock is at the forefront of large-scale organic production and marketing, and Kingsley Tobin's award-winning wines from Kingsley Estate have proven the viability of organic viticulture.

And there are many other food producers in Hawke's Bay following biologically sound farming practices who can provide the models for changing from chemically reliant agriculture to more natural methods.

If the political direction of our elected representatives can follow the experience and enthusiasm of our biological farming experts, Hawke's Bay could be a world leader in clean, green farming practices.

If our politicians are looking for a vision, they need search no further than the land beneath their feet.

The timing is auspicious. Girija Page's PhD was presented in May, Council's are now consulting on their 10 year plans, and from 23-25 June, Napier will host the New Zealand Soil Carbon Conference.

"Conservatively, the global carbon trading market is going to be worth \$3 trillion. To put that into perspective, \$3 trillion is roughly the size of the combined markets for oil, natural gas, electricity and coal today"

Even if partly true, this mind boggling claim by Peter Fusaro, recognized "thought leader" on energy and environmental markets, features in the Conference agenda, and should capture the attention of the business community and the politicians. If they can be convinced to join a bold initiative of encouraging best practice in soil management in Hawke's Bay, the benefits could be far reaching.

Carbon credits aside, the premium for organic produce is well embedded, a "clean and green"

reality would be very attractive to tourists, and the health benefits to the community living in an atmosphere free from pesticides and herbicides would be considerable.

War against nature

Of course the agro-chemical industry is so firmly entrenched in both mindset and practice that it could be a long and difficult struggle. But the crude science of reducing nutrients to NPK, and employing the attitude and language of warfare to fighting and combating weeds, pests, and diseases has had its day.

Today's agro-chemical industry emerged from the munitions industry after WW2, so perhaps it's not surprising it wages war against Nature. But the double standard we apply to Nature is shameful.

The health sector in all its voices, from our GP to the ads on TV, remind us to avoid consuming nasty chemicals, whether they be in socially acceptable alcohol and junk food, pariah cigarette smoking, illegal recreational substances, or pills prescribed by the doctor. Too many chemicals and we get sick.

Yet we wage chemical warfare against Nature and poison our food chain. Surely a vegetable, a fruit tree, and a cow are subject to the same laws of health and well-being as humans.

Those who lived in Hawke's Bay during the 60's and 70's will remember the extraordinary sight of massive flocks of seaulls descending on freshly ploughed fields to gorge on earthworms exposed by the plough. We don't see that today. The gulls are still around. It is the worms that have gone, along with a few-billion-per-teaspoon-of-soil microbes.

All over the world, years of mono-cropping, use of chemical fertilizers, and chemical pest and disease control, have depleted the soil biota, and an essential function in the food web has been by-passed.

Many of the diseases blighting lives and over burdening health systems can be attributed to poor nutritional levels in the food we consume. Humans are complex chemical organisms that have co-evolved in symbiotic relationship with the soil-based food web on which our survival depends.

We need to ingest sufficient quantities of a vast range of vitamins, nutrients and trace elements to feed the chemical processes which fuel body and brain functions. All come from the food we eat, the water we drink, and the air we breathe. Imbalance can result in disease, hence the importance of looking after the quality of our air, water, and earth.

The opportunity to become clean and green is here and now. With the incentive of carbon credits, leadership from our politicians, and the expertise and determination of the biological farming community, Hawke's Bay could be a leader in sustainable agriculture. We could showcase to the world the practicality and benefits of Farming Carbon.



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You can enter in one of six categories - individual/family, rural, product/service, business, environmental education, and community.

Entries and nominations close **15 July** and can come from anywhere in the region. Get forms from www.hbrc.govt or contact one of the supporting

Councils for more information.

A combined Council initiative from Hastings District Council, Napier City Council and Hawke's Bay Regional Council

Living Off The Land

(cont. from p.1)

It would seem to be simple common sense that our local elected officials and policy-makers, as devoted to the Bay's land-based economy as they are (and should be), would put protecting both the quantity and quality of our land and soil at the very top of their agendas. The rhetorical commitment has been creeping up the scale lately, but adopting and enforcing the required policies is a different matter.

In short, if our local officials envision a blossoming future for the Bay's land-based economy, they will need to come to terms with educating and even, heaven forbid, regulating farmers.

If farming practices are being used that can be documented to be degrading soil quality, why should those practices be condoned? Our society does not (or at least so the law says) permit other industries to degrade our air or water or land. In these other sectors we do not rely simply on "education" and voluntary protocols. Why should we permit the farming industry to ruin "our" soil? And there's the issue ... from a societal perspective, whose soil is it, anyway?

Let it rain

Protecting our soil, in quantity and quality, is only half the battle for sustaining a prosperous land economy in the Bay.

The other half of the equation involves water.

At the highest level, the trends are set, and won't be adjusted for generations, however assiduously we try. Global warming means less rain for Hawke's Bay. A report for MAF in 2007 said that year's drought would drain \$700 million from the Bay's economy over three years. A few days ago, a Ministry spokesman put the number now, after successive droughts, at "well over \$1 billion."

What does that actually mean? Take, as just one example, the meat processing industry, which employed 3,270 people in HB in 2007, produced 4.5% of the region's GDP (and accounted for almost 13% of all NZ's meat processing), and represents 27% of the region's exports. Drought means reduced stock levels and thus fewer animals for the works. Recent media reports indicate that, as a consequence, HB processors are already advancing their normal winter slow-down and shut-down schedules. The result: lower worker incomes, even job losses, and fewer export sales. One job loss in this sector can generate 2.3 additional job losses across the region in other sectors.

So, the stakes involved in water use are huge. In the near term, the least we can do is get a lot smarter and environmentally mindful about how we manage the water we do have here in the Bay. This requires three steps: 1) intelligent allocation of water use; 2) prudent development of water harvesting and storage capacities; and 3) vigorous protection of water quality, especially as it is impacted by farmers' land use practices.

Lately, the Regional Council is talking a good game in each of these areas. But once its ten year plan is adopted, actions will need to match the rhetoric. Recently, the Council has cracked down on water consent holders who have not been reporting their water takes in a timely manner or accurately. More systematic and reliable water metering will be introduced. Minimum water flows in our rivers will be re-evaluated against the concern that current standards provide inadequate water quality protection. Better information will be developed about the

impact of both surface water and direct water takes on our underlying aquifers, so that these takes can be more intelligently regulated.

To increase usable water supply for farming (i.e., for subsidising our land-based economy), water harvesting and storage schemes will be pursued. The implication has been that the Regional Council will "invest" in such schemes, but clearly, public/private cost allocations, based upon appropriate weighting of private gain versus public good, will need to be debated.

Finally, the benefits of water use and supply given to farmers must be reciprocated by farmers' commitment to protect the quality of the region's waters. Intensive use of chemicals, soil erosion, and stock effluent are farmers' main "contribution" to the region's water ecology. In other regions, like Canterbury, there is now evidence that nitrate discharge from agricultural land use is having a negative impact on the quality of groundwater, in some situations exceeding drinking water nitrate standards.

Whatever form the pollution caused by farming takes in Hawke's Bay, if it violates regulatory standards, enforcement action should be aggressive, with maximum penalties sought. If the public's water is to be used to support the privately-owned land-based economy, then the public's asset must be fully protected. At a national political level, as in the case of dairying, for example, voices from the Agriculture Minister to Local Government NZ are beginning to warn that farmers will need to face up to higher environmental standards and "more regimented enforcement."

If we don't give up the land, degrade its quality, or squander and ruin the water, can we then look forward to a viable agriculture economy in Hawke's Bay?

Well, maybe.

Innovation

As we've seen, arguably the most important risks and threats to our Bay land economy are of our own making. These dangers can be avoided, mitigated or eliminated. Here locally, we can choose to re-build our soil, choose to protect the Plains from non-agricultural uses, choose to conserve water and guard its quality. These are matters of political will and application of known best practices. No black magic required. They can be addressed by us, right here in the Bay.

Some other factors are at play that also must be addressed, but these are not as much under our local control.

A good example is innovation in the agricultural sector. To be sure, there are many innovators in this sector in the Bay. Phyllis Tichinin and Mark Sweet identify just a few in their articles.

But there's also plenty of commentary about a looming talent or skill crisis in NZ agriculture ... from a dearth of young people wanting to take up farming to the dwindling supply of individuals highly-trained in the requisite sciences. The agriculture sector is filling around 65% of its advertised vacancies.

As Hastings Councillor Mick Lester has written in an earlier **BayBuzz Digest**: "Without the continual infusion of new talent into the agricultural sector, we will see it left in the hands of an ever-aging and diminishing population of farm owners and workers. This will inevitably lead to a lack of enthusiasm and new ideas which are so essential if we are to continue to lead the rest of the world in the efficient production of protein." Others have written of a fading generation of scientists and researchers who were true students of the life sciences that underpin innovation in the agricultural sector. Alone, Hawke's Bay schools, from elementary through EIT, can only do so much to nurture these skills and enthusiasm.

Innovation comes not just in the form of scientific insight into soil chemistry or plant and animal genetics. It is needed equally throughout the "food chain," including food processing and packaging, new end-products (like the pharmaceutical products created from animal blood by local Southern Lights Biomaterials), higher-value "boutique" and specialty food products, food marketing, and mitigation of environmental impacts.

At a national level, the latest budget proffers a fund, the Primary Growth Partnership, that will receive \$190 million over the next four years to boost innovation in the primary and food sectors. The funding will apply to pastoral, arable, horticulture, seafood, food processing, climate change, forestry and wood. Pundits are arguing over whether this is enough. In any case, one can only hope that Hawke's Bay councils and enterprises compete effectively for our share.

But R&D funds will lie fallow if we don't have the talent to use them. Ministers Tolley (Education) and Carter (Agriculture), what say you to this?!

Finally, let's turn to a couple of "externalities" or outside factors that importantly affect the viability of HB's land-based economy.

Externalities

Because the preponderance of the Bay's agricultural output is exported, the region's land economy is highly vulnerable to global trends and attitudes over which we have very little control.

Our foreign "customers" can quarantine our fruit on bogus grounds and subsidise their farmers to price us out of the market (as is the case, most lately, with dairy subsidies). Or, where indigenous resources permit, they can copy our best practices and produce more competitively themselves. Or foreigners can screw up the global financial system, affecting our currency and credit access. Oil prices, and therefore transport costs, can gyrate widely, but with a relentless upward trend.

And then there are those pesky – and fickle – foreign consumers, who abandon higher-priced

organic foods (where NZ could try to make its reputation) in droves when their economies turn sour. The New York Times, for example, recently headlined the collapse of the organic milk market in the States.

Or they worry about the carbon emissions associated with transporting our food products around the world to European or North American markets, despite the evidence that, even with transport, we produce food more energy-efficiently.

There's not much we here in Hawke's Bay can do about such factors, other than hope our national leaders protect our interests as best they can.

But perhaps the one thing we *can* do regionally is contribute our bit to justifying and sustaining the "Clean, Green" reputation that provides a crucial underpinning to our ability to market our food products abroad. That reputation must be earned and supported day-by-day in our growing practices, in our stringent protection of our environment, and even in the way we showcase our coasts and rivers and rural environment to foreign visitors.

As David Cranwell suggests in his article, our food export competitiveness begins with quality – meeting and exceeding the toughest standards that major foreign buyers can place on their suppliers. A superior product is where our reputation begins. High productivity off the land – where our biological farmers are showing the way forward – then adds to our competitive advantage. And finally, the "halo" effect of producing from a distant land rumoured to be clean and green – a mecca of sustainable practices – adds the final glow to the New Zealand agriculture brand.

We in Hawke's Bay have a substantial ability to contribute to each of these necessary ingredients for fostering the future success of our region's land economy. The choices are ours to make.

AGRICULTURE IN HAWKE'S BAY – PRIMARY FACTS

AVERAGE ANNUAL GROWTH IN GDP	2002-2007	2007-2011
Agriculture	7.7%	3.0%
Fishing	-12.1%	-2.0%
Forestry & Logging	2.1%	1.5%
Food, beverage manufacturing	3.4%	2.3%
Wood & paper products	5.8%	1.2%
Total GDP	4.3%	1.5%

AGRICULTURE SHARE OF HB GDP	2007	2011
Agriculture, forestry, fishing	17.3%	18.2%
Food, beverage manufacturing	16.2%	16.8%
Wood & paper products	2.9%	2.9%
Total Agriculture Share	36.4%	37.9%

EMPLOYMENT GROWTH	2002-2007	2007-2011
Agriculture	0.1%	0.8%
Total – all sectors	2.5%	0.2%

AGRICULTURE RELATED EMPLOYEES	2007
Services to agriculture	3,341
Meat processing	2,822
Apple & pear growing	2,017
Fruit & vegetable processing	1,648
Sheep farming	1,467
Sheep-Beef Cattle farming	918
Fruit & vegetable wholesaling	554
Total - Agriculture	12,767
Total – All sectors	74,697
Percent employed in Agriculture	17.1%

ARTS & Lifestyle

Brooks Belford



A Stitch In Time



Look South exhibition, Hawke's Bay Museum and Art Gallery

Textile artist and local resident Clare Plug spent two weeks in Antarctica in 2006 as part of an artists in residence program co-sponsored by Antarctic New Zealand and Creative New Zealand. The results of her experience comprise **Look South**, an exhibition of contemporary art quilts, now on view at the Hawke's Bay Museum and Art Gallery.

From Scott Base in the Ross Sea region, Plug explored numerous sites and features on the continent. She accompanied scientists sampling ice cores at McMurdo Sound. She visited the rough hewn huts that sheltered Antarctica's early explorers. And she was awestruck by the Dry Valleys, a unique region free of ice and human intervention. These and other encounters provided grist for **Look South**.

"Antarctica" says Clare, "was an overwhelming experience." "It was hard to limit myself to what lay beneath my feet. There was just so much to work with and so many ideas buzzing around in my head. I knew I needed to work on several fronts."

Look South is a distillation of broad themes: the challenges and heroism of Antarctica's early 20th century explorers and the ideals that empowered them; the continent's global significance as a scientific research and environmental "early warning" station; and, inevitably, the power and vulnerability of the implacable landscape.

This is not your grandmother's quilt show. **Look South** is a striking and powerfully affective installation. Dark hued textile compositions stand out against pale walls. Translucent white banners hang motionless from the ceiling, zigzagging through the Gallery's open space. Sounds of polar wind, bird calls, and footsteps on ice play from a quiet soundtrack.

The quilts were completed during the 30 months since Plug returned from Antarctica.

Honing her fellowship experiences into a coherent creative vision and finding the means to express it was a gradual and, at times, uncertain process. The crucial starting point came from a single, encompassing inspiration.

Clare was captivated by the historic huts – now preserved as a museum. There she found photos, artifacts and, most importantly, flags and banners from Robert Scott's ill-fated mission. Symbols of heritage, triumph and commemoration, these served also as navigational tools and signals of warning, danger and distress. In the tattered textiles, Plug gleaned a visual and thematic reference point from which to develop the works for **Look South**.

Flags and banners figure prominently in the exhibition. Simultaneously dignified and ethereal, the gauzy *Hanging Banners* bring to the exhibition a spirit of celebration and triumph while invoking ideas of heritage and national identity. Plug's use of the flag motif, on the other hand, often signifies something more ominous. Flags – as crucial to human activity on the continent now as they were in Scott's day – appear full size but frayed and unredeemable in large, oblong quilts entitled *Ice Crack 2* and *Warning*.

In *Polar Dreams 2* the faded remnants of actual Antarctic marker flags are superimposed over mattress ticking like that used on beds in the old huts. It is an interesting juxtaposition: one fabric an icon of domestic practicality and the homey facts of sleep, or, in this case, probably exhaustion. The other, a frayed remainder of the explorer's confrontation with an unrelenting frontier.

While in Antarctica, Clare had neither dye facilities, nor materials or time to produce substantial work. Instead, she experimented with various small textile samples & badges. Once back home, having established the banner – and the notion of signifiers – as a

conceptual starting point, Claire revisited the possibility of the badges. She developed a series of simple icons – crosses, triangles, circles, squares, and rectangles – to create a consistent, symbolic narrative that runs throughout the works. Their graphic simplicity belies multi-layered meanings.

Shrouded, for example, is a spare, white muslin quilt bearing an equally spare white Greek cross at its center. Less obvious are the four stitch lines running diagonally from corner to corner creating large triangles: signifiers of mountains and cairns. With a pure and understated simplicity, this quilt offers a quiet homage to the terrible Erebus crash.

Among the extraordinary landscapes Clare encountered, the Dry Valleys were particularly dramatic. In a related series of rectangular quilts, she uses circles and squares to notify us of the immeasurable importance of one of the world's most profound and undisturbed terrains. The circle's regularity is inevitably man made, like sampling cores or the round view through a microscope. Its presence in this work declares the vital importance of scientific research to document and forewarn us of the fragility of natural systems. Squares – also not of nature – denote the accessories of human exploration: huts, sledges, storage boxes, and flags.

Plug's mastery of abstraction, used to profound effect throughout **Look South**, is the outcome of a longstanding interest in the power of design. Since her early days of patch working, she was drawn to the implicit abstraction inherent in many of the traditional designs of her craft, especially the pinwheel motif typical in American quilting. "They were very evocative and stylized, and I thought that was very powerful because you could convey an idea with such a simplified pattern."

In conversation at Thorps Coffee House a few days after the **Look South** opening, Plug reveals that her Antarctic experience actually predates the 2006 fellowship. She had applied to Antarctica New Zealand's Artists in Antarctica program in 2004 but her proposal was not accepted. "If I hadn't made it in 2006, I wouldn't have seen it as a failure. I learned so much about grant writing and about Antarctica in the process of preparing the proposal; there was so much in my head. Even if I couldn't go I was going to stage an exhibition 'Antarctica in my Mind.'"

Of course this is tongue in cheek. But it hints at the unstated passion, resourcefulness, and determination that has taken Claire Plug from casual "hobby sewing" in early adulthood to being one of New Zealand's most recognized textile artists.

It was a slow evolution, encouraged, says Plug, more by happenstance and unexpected opportunity than by deliberate design. Plug didn't see her first quilt until after graduating from university with an honors degree in zoology. An OE took her to the United States and the county fairs with their ubiquitous home baked pies and colorful quilts. Subsequent travel to England landed her a

housekeeping job at a rural homestead and plenty of time for hand work: "Traditional stuff. Placemats for my mum." With the help of books, magazines and the occasional workshop, Clare set about improving her skills. "Every year I would set a new challenge for myself. One year it was to use no straight lines. Another year it was to use no patchwork..."

Facing possible redundancy from her government job in the mid 1980's, Clare stumbled into an opportunity to enroll in a "redundancy training" program in Craft and Design at EIT. This was her first formal art training. Fiber arts was not part of the curriculum. But her exposure to printmaking, painting, woodwork, slab clay and other mediums encouraged new understanding and innovation in her textile work.

Clare committed herself to quilting full time after the EIT training. "Back then, I was excited and naive. I had no idea what the journey I was commencing would hold, or how slow my progress would actually be!" Plug soon found herself out of synch with New Zealand's more traditional quilt making community. All but her most conservative work was being rejected from local and national exhibitions.

"But those rejections made me open to other opportunities." A friend told her about an exhibition of modern quilts at the Manley Art Gallery in Sydney. Clare's innovative submission was not only accepted, it sold on the opening night. That experience opened her eyes to the opportunities available overseas. At the annual Ohio Quilt Surface Design Symposium, which Plug attended seven times, she explored textile art with Nancy Crowe, Ned Wert, and other leading innovators and educators who were radically redefining the medium.

Now that the Artists in Antarctica fellowship is completed, Clare's first task is to "reboot and get a job." But her work has taken an important leap forward. "It's now more substantial, more multi-layered." Antarctica will remain a significant source of inspiration for some time to come.

At the Museum, walking through her exhibition, Plug explains that various aspects of her quilt making process are invariably unpredictable, leading to unexpected results... sometimes fatal, but, more often than not, highly effective. "Happy accidents, some people call them. But I had a teacher who told me 'no, it's a gift,' so when something like this happens," referring to striking, accidental drops of white shining like light or snow against a night black background, "I always think 'gift.'"

"I know it's not very business like," Plug says, "but I'm not one of those people with a master plan. The world changes so fast, how can you possibly know what's possible?" Yet somehow Clare Plug has managed to arrive at the right place at the right time and, in so doing, continues to push the craft of quilting decisively into the realm of modern art.

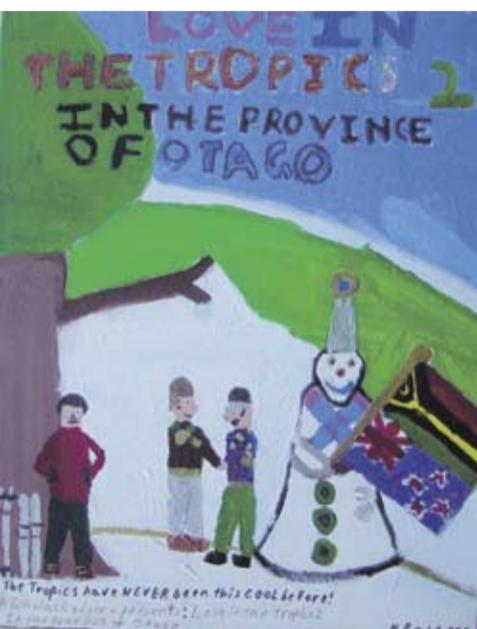


Polar Dreams 2 by Clare Plug

Bridget Sutherland Guest Columnist



Light in a Dark Place



Love in the Tropics by Nicholas Rodgers

'Light in a Dark Place' was the title of an exhibition held recently at the Community Arts Centre in Hastings. The works on show were created by artists from the Mosaic Creative Space in Taradale, run by Presbyterian Support to enable and facilitate creativity in the community for those who for various health reasons do not have easy access to the mainstream art world. Tutored by Napier based painter Ruth McLean, sculptor Liz Earth and model maker Joel Taylor, the works both singularly and collectively tell a tale of journeys and dreams beyond the everyday.

The notion of being an 'outsider' artist was embraced by the Surrealists and a number of other early European art movements such as Dada and Expressionism. Recalling aspects of these earlier moments in art because of their raw ingenious naivety and instinctive use of colour, the quality of the work in this recent show by Mosaic artists simultaneously defies classification. The work stands on its own and in spite of its marginalisation. One of the defining qualities of the exhibition as a whole was the combined use of image and text in much of the work, suggesting a world view that moves beyond rigid boundaries and any attempts at labeling. The main motif for the show is in fact a word-mobile made from a bicycle wheel from which are suspended letters (carved from soap), that read 'Mosaic Real People'.

'Love in the Tropics (in the Province of Otago)' an acrylic painting by Nicholas Rodgers, highlights this joyful play with word and image and sets the pace for this exciting and intriguing exhibition. Completely original yet reminiscent of the American folk artist Howard Finster, Nicholas tells us in handwritten text at the bottom of his painting that the Tropics have never been this cool before. The work is part of a Wedding Series and in another painting called 'The Honeymoon Suite', text in the lower corner informs us that one of the guests takes photos of "the South Pacific wedding cake." Depicted also are the Bride and Groom during their first ritual dance. Nicholas' works are insightful and engaging, their strong earthy colours and primal symbolism strangely haunting.

Tony Ball, in a work entitled 'Chris and the Potatoes', takes us on a journey of the inner mind, creating a kind of intricate psychic space from simple lines, vertical and horizontal. As if haphazard grids, the seemingly random yet perfectly placed lines and use of colour draw

in the viewer's gaze in an almost hypnotic manner. Two circles, like concentric eyes, seem to echo this theme of hypnosis; in the manner of eyes on butterfly wings, one has the sense that something is indeed looking back at us from the picture surface. Other paintings by Ball are powerfully expressionist (notably their instinctive use of primal colour that recalls, for example, the German expressionist Emil Nolde) and yet another drawing is presented as if a language tree, with skeleton branches and symbols for leaves.

The paintings of Yvonne Nelson are ephemeral and evocative abstracts that are testament to her ability as a talented colourist. Crimsons, purples and blues are brought together in the most subtle and poetic way. Fluid and musical, it will be exciting to see where Yvonne's painting takes her. "It's work I've never done in my life, and seeing it hanging at the exhibition just blew me away" said Yvonne. Painting from her wheelchair, she comes to Mosaic three days a week and on Fridays is a volunteer helper at the Hastings hospital.

The theme of far away places was given concrete form in the brief that Joel Taylor gave to the students in his model-making workshop. He distributed images of New York and asked the students to respond to a particular place or idea that caught their imagination. Mack Tipu produced an almost cubist version of the Statue of Liberty from foam, plaster and paint, while Katrina Osbourne made a model of the Brooklyn Bridge from plastic pens.

Katrina had been collecting pens from local retailers for some time and it seemed serendipity that they could now be used for the buttresses and massive columns of the Brooklyn Bridge. The seemingly simple but extremely meaningful activity of collecting pens is for Katrina the thing that, like the Brooklyn Bridge, connects her to the outside world and to the community at large. In tune with the use of image and text in much of the work, Katrina's model says something fascinating about the desire of these students to communicate, this time the focus being on the instrument of writing, a pen, as opposed to the mark it makes.

Kandy Wilson saw a heart in an image of Central Park. It triggered for her memories of ice-skating when young and so she created a beautiful heart shaped ice rink complete with model skaters in the middle of New York's Central Park. The linking of these two events powerfully evokes for the viewer a sense of Kandy's poetic and symbolising world view, a moment of freedom and joy in her childhood is mirrored in the timeless and physically dynamic space of the ice rink.

Nicholas Rodgers responded to an image of Madison Square Gardens, making a model of Elton John performing on his grand piano. Again Nicholas uses text, it reads "One Night Only Concert". The songs that Elton John sang that night are written in hieroglyphics on the model of the music sheet in front of him. Along with the use of text in his paintings, music is a major focus for Nicholas, again suggesting the need for alternative or more fluid forms of communication and language.

Eddie Budd works mainly from dreams, and his drawing, 'Rendered Speechless', seems to suggest in more direct form the barriers that many of the students confront in their desire to communicate, and their subsequent use of alternative forms. Another stunning work of Eddie's depicts a line of white bowls that are

being filled to overflowing from an invisible source in the ceiling of an enclosed room. This image of inspiration and hope in many ways suggests to me the atmosphere at Mosaic and the dedication of all involved to keep this valuable creative space operating.

RealPeople@Mosaic operates a commercial Gallery onsite where one is welcome to drop in and view the art works in progress or in completed form. The service is funded for 48 clients but provides for 75 a term on average. Mostly their works are for sale and support from the community is greatly appreciated.

Roy Dunningham Guest Columnist



The Labours of Herakles

Quite simply, **The Labours of Herakles** exhibition by Marian Maguire now at the Hastings City Art Gallery is the most interesting and satisfying exhibition of New Zealand art that I have seen for some time. The works are lithographs and etchings, that is, limited edition prints made by the artist.

Printmaking has become less fashionable in recent years which is a pity as the processes involved give the works their unique character and, of course, it makes original art works accessible to buyers at real world prices.

Maguire has taken the theme of the labours of Herakles, (a set of daunting tasks set for Herakles, that macho hero of Greek mythology,) as a metaphor for the colonising of New Zealand. Colonists are shown as figures drawn from the black figure illustrations of ancient Greek vases, while her Maori images stem from portraits by early-contact European artists like Parkinson (Cook's artist) and de Sainson (d'Urville). This use of metaphor gives the work considerable graphic elegance and helps us to view the trials and conflicts of colonial times objectively.

There are parallels between ancient Greece (the dominant source of Western culture) and early Maori. Both involved heroic voyages and a strong core of warrior culture in their mythology.

In *Herakles Writes Home* the colonist (Herakles) sits in his slab hut surrounded by transported trappings of his cultural origins, but the rough cleared bush seen through the window speaks of his new reality.

Maguire recognises the complexities of Maori/settler relationships too. *Herakles Discusses*



Herakles Dreams of Arcadia by Marian McQuire

Boundary Issues with the Neighbours sees the images of Maori and colonist interchange, while in a wonderfully moving *Herakles Goes to Gallipoli* a colonist and de Sainson's Maori chief are aligned, in uniform, with Herakles, in a common cause.

The artist also shows a wicked sense of humour. Look for Herakles' hilarious attempt at rabbit control and the futility of his efforts to repulse the amazons (suffragettes) and to make a chariot from No. 8 wire.

The technical control shown in this work completes a most engaging exhibition which runs until June 28th.

Another "must see" show at the Hastings City Art Gallery from June to August is a major survey of the works of John Bevan Ford.

Ford was a foremost member of that innovative group of Maori artists of the later 20th Century whose integration of traditional Maori themes with contemporary Western art created some of the most unique New Zealand art of the period.

Sadly, for many years they were largely ignored by the arbiters of taste in the galleries and art books of the 1970s and 80s before receiving their due recognition in shows like this.

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Tim Gilbertson
Guest Columnist



Kevin Trerise
Sustainable Business Advisor



Wanted: Barking Dogs

The amalgamation debate reminds me of the famous Sherlock Holmes story. The eccentric pipe smoking Pom detective tells Dr Watson about the dog barking during the night. "But the dog didn't bark in the night," replies the simple Doctor. "That," says the Great Detective, "is the extraordinary factor."

Amalgamation, or shared services, is the debate that no one is having, because it is in no one's interest except that of the ratepayers and citizens. And their voice – which should be represented by the press, if no one else – is stifled, because the media relies very heavily on government and local body advertising for their revenues. No one, least of all the press barons, are sharpening up the cutlery set to dismember the golden goose.

At a national level, there is a similar process, but it concerns the quality of government spending. In my time as a local body representative, I have seen first hand the wastage, inefficiency and duplication that has cost us millions and millions of dollars. But any call to reduce government expenditure is greeted with howls of protest. There are few calls to make expenditure more effective.

A good example is the saga of the Hawke's Bay DHB, which was sacked a year or so ago for taking a stand against financial mismanagement. The Board, after a hard fight, was proved to be in the right and reinstated. But the guilty were never brought to account and the perpetrators were let off scot free. They were never called to account and the dishonest politicians who protected them are still head down in the trough.

But how many other rorts and rip-offs and straight thefts lie undiscovered? How much skimming and scamming is going on in all the other DHBs and government agencies around this fair land of Aotearoa. We don't know. The Office of the Auditor-General checks processes and policies and makes sure the numbered vouchers are in order. They don't really go looking for dishonest practices. There is a fine

line between proper and necessary spending and a pet project pushed by an interest group with mates who stand to benefit. But that debate is never heard in public.

I am convinced, after fourteen years at district council and regional council level that Hawke's Bay would be better off by millions of dollars a year and would be run much more efficiently as a single entity. The one proviso is that we would need a functioning independent press to scrutinise the larger body to stop it becoming a bigger monster than its component parts. And we would need an audit department that does more than pull out files and make sure they conform to government policy guidelines.

The issue is proven by the councils' collective budgets for the investigation into shared services and the timelines built into annual plans. They are miniscule or non-existent. I think we plan to send \$25,000 in three years time to think about amalgamation. In this case, words speak louder than action.

So what should be done? Begin by appointing one manager for all five of the roading departments in Hawke's Bay. Then bolt the departments together. Follow that up by doing the same for water supplies, libraries, sewage systems, parks and reserves, rates collection, dog control and finance.

Set up a single planning entity for the region and one computer network for the whole province. This kind of consolidation is already happening with Civil Defence, which is run out of Napier by a single committee representing the whole region. And surprise, surprise... it works perfectly.

Finally, when all the systems are ticking along nicely, assuming they haven't been sabotaged by vested interests, the citizens might look about them and realise that, yes, life is not so bad with just the one council, one administration, and one set of rules for all.

Time for a few sleeping dogs to wake up and start barking.

Strongly Sustainable

The current urban development strategies for the Hastings and Napier Councils have less than 10 years to run. These authorities along with the Regional Council have committed to jointly develop the Heretaunga Plains Urban Development Strategy (HPUDS). Full credit to them for working cooperatively on this important initiative.

A strongly sustainable approach must form the foundation to guide the review. This model recognises that the economy and our society are interdependent and that the environment's capacity to provide the required resources and process our wastes is limited.

In their report Climate Futures - Responses to Climate Change in 2030, UK-based Forum for the Future present one scenario for New Zealand wherein by 2030 environmental refugees from Bangladesh and Pacific Islands make up 18% of the our population. During the same timeframe, sea level rises are likely to cause inundation in our coastal areas, water will have become a precious resource and likely a traded commodity, and climate change will be impacting on our rural land use with an increase in weeds, pests and diseases.

For this review to yield a comprehensive and meaningful long term sustainable development strategy, there will need to be some critical analysis done to address these and many other implicated issues to provide practical long-term solutions. Anything less would waste ratepayer's precious money and enshrine the unsustainable "business as usual" approach.

As an agricultural-based economy, we are particularly vulnerable to a variable climate. Hawke's Bay must adapt to climate change to ensure the viability of industries that depend on a stable, equable climate.

Strong sustainability is the prerequisite of any human development, whether social, economic or technological. It requires preserving the integrity of all ecological systems and enabling an ecosystem to recover from disturbance and re-establish its stability, diversity and resilience. Here are five key challenges for the review team to consider:

1. Urban sprawl - The unchecked expansion of urban areas leads to inefficient resource use and the degradation of inner cities. Single-use developments, like the proposed regional sports park, are often isolated from transport networks, encouraging the use of private cars.

2. Land use allocation – The irreversible loss of flat, fertile, food growing land is not sustainable and the retention of prime horticultural land close to urban centres is essential for our continuing survival as a food growing region. The continued development of the Plains Zone will contribute to urban sprawl and increase transport and infrastructure problems

3. Green space - Green spaces are a vital element of sustainable cities, providing people with opportunities to rest, exercise, play and socialise. New green spaces need to be incorporated into development plans as a matter of course, while existing parks and other outdoor facilities could be better maintained and more fully integrated into community lifestyles.

4. Redeveloping industrial sites - Commercial sites need modern technological infrastructure as they are important elements of a sustainable city plan, providing work and services that support our local economy.

5. Sustainable construction - Sustainable construction methods are often perceived as costly luxuries. But new technical solutions abound, and their economic and environmental advantages need to be demonstrated on a large scale.

Planning for sustainability is complex because it involves accounting for the environment and social structures alongside economic factors, and should incorporate the views of local residents and businesses.

Local governments play an important role in all aspects of sustainable urban design – from the location and form of new dwellings, to the co-ordination and provision of social and physical infrastructure for new and existing communities. For years, they have been criticised for fulfilling these functions without regard to the long-term social or environmental outcomes.

Local governments are beginning to emerge as leaders in a range of community building and sustainability initiatives throughout the world, and are now recognised as crucial players in achieving the new agenda of "sustainable human settlements". Let us all hope that our local authorities will lead us, through the Heretaunga Plains Urban Development Strategy, to a strongly sustainable Hawke's Bay.

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Be Poisoned And Die (cont. from p.1)

Dr. Don

No one achieved more in assisting the change from a local industry to an internationally competitive export sector than the late Dr. Don McKenzie, who was a researcher plant breeder at the DSIR site in Havelock North.

Dr. Don saw the need for new varieties and building international relationships. But possibly most important of all, he redesigned the traditional old multi-leader tree into an efficient single-leader tree. This revolutionized the way in which apples were produced, resulting in greater volumes of high quality fruit per hectare than ever before.

Dr. Don had a vision, he loved the industry, and he was a real friend of Hawke's Bay, turning down promotion to remain in the area close to the growers. Dr. Don's old lab now stands forlornly on an empty piece of land where the DSIR orchard used to be. If ever there was a chance to do something to remember one of the industry's innovators and characters, his lab should be rescued and turned into a small working museum. Many people would work to make this happen, if given the opportunity.

Exporting to America

The American market from the late '60's onward became a destination of serious importance as they paid high money for large-sized fruit. About then, the NZ crop was almost 50% Granny Smith and 50% Red Delicious, and the Americans loved our Granny Smith.

There was a catch – quarantine. We had Leafroller; they did not, and understandably they did not want it.

The NZ MAF successfully negotiated with USDA and set in place a pre-clearance quarantine system, which replaced the old inspection-on-arrival system, where failed fruit was fumigated with methyl bromide, seriously compromising shelf life. The system involved the MAF inspecting and rating orchards as USA-suitable, followed by at-harvest inspecting, and segregating blocks of packed cartons that visiting USDA inspectors selectively inspected. The program would only continue if the inspectors failed less than 18% of blocks during a season. This put huge responsibility on everyone to perform. Some years we came perilously close to failure.

The industry had always used a relatively high volume of pesticide and fungicide. But so they would not lose the lucrative US market, growers had to sign a declaration that they would apply organophosphates to the US crop every 14 days. In the eyes of many growers and researchers, this was a backward step, as at this time a number of progressive growers were questioning the industry's reliance on an ever-increasing volume of pesticides.

No more scorched earth

This single-minded action – spraying to meet the US requirement – was the catalyst for change to cleaner production and safe fruit. Until this time the majority of growers used high-volume spraying methods. Spray was applied to run-off, in the belief that drenching the tree gave better coverage, resulting in less pest and disease presence at harvest.

But worrying trends were starting to appear. Predators could not cope with the chemical onslaught and disappeared, leaving the pests such as Leafrollers, Mealybugs and Leafhoppers to develop resistance and flourish, creating serious access issues with our importing countries.

Dr Jim Walker, entomologist at Hort Research, clearly saw that for the NZ apple industry to survive and prosper there needed to be a better way. From the mid-90s, Jim

and his team started talking to growers about transforming the whole basis of pest and disease management from one of calendar-date spraying with broad spectrum organophosphate insecticides, to one of monitoring all pest and diseases within the orchard and only spraying when predetermined pest levels were reached. And more selective, "softer" (i.e., more targeted in impact) chemicals were used that allowed beneficial insects to survive and play their part in pest management.

Finally, 1996 saw the roll out of the Integrated Fruit Production System (IFP). Jim and his team began the task of converting the whole industry from one of basically "scorched earth" to working with nature. Some growers immediately took it onboard; others took a lot of convincing. Jim's team stuck to their guns ... today every grower is IFP-registered, applying chemicals when and if required with high-tech low and ultra-low volume sprayers.

No grower can submit fruit for packing unless they have an approved – checked and audited – spray diary. Without this, the fruit will not be packed. This contrasts with twenty years ago, when spray diaries were filled out with varying degrees of accuracy, as it did not really matter.

The transformation has been amazing, putting NZ at the forefront of worldwide pip fruit production. Insecticidal loading in orchards has reduced by 80% between 1995-2008. According to Jim Walker, in 1995 organophosphates were applied at a rate of 11.6kg per hectare. In 2008 that had reduced to 2.6kg per hectare, made up of the more benign chemicals that allow the natural enemies of pests to contribute to effective biological control.

Three years ago, a major European buyer, who annually purchases one million cartons of NZ apples, informed us in November that he would only buy apples that had detectable residues 40% lower than the allowable OECD level.

This created real panic among his suppliers, as all samples, pre-packing, had to be air freighted to Germany for testing and possible clearance, because he did not want containers of apples arriving in Europe only to be found to have unacceptable residue levels. When the results came back, not one grower had failed to meet the new residue level. In fact, more than 80% of apples tested had a nil detectable residue level.

This same buyer told me this year that he has absolutely no worries with NZ apples... our competitors are the worry.

The future

There is no turning back. We have to become better at producing bug-free and, as close as possible, nil residue fruit as we can.

There are risks. Dare I say it, we are seeing the first signs of "quarantines" emerging as trade barriers. The Australians are masters at this, with Fireblight being the obvious example. The world markets are clogged with apples, and farmers reacting against imported products affecting their incomes. With the world economic system under real pressure, quarantines could become the tool used to bar unwanted imports. This year we have faced quarantine issues in Taiwan, China etc.

The answer will lie with:

- Scientists coming up with better systems of pest management – e.g. the use of insect sex pheromones to disrupt mating.
- Chemical companies developing benign specifically-targeted pesticides.
- Breeding of varieties that are resistant to pest and disease attacks and

are selected by the consumer for their eating quality.

- Formation of production links between growers in NZ and growers in other countries – this will help lessen the risk of producer protest.

While we must address these issues, I believe the orcharding industry is one that Hawke's Bay should take great pride in. Advances made in past years have tremendously lessened the chemical footprint of the industry, lessening harm to both producers and consumers. More can be done. And I have no doubt that it will be.

Land Protection Society– Why?

(cont. from p.3)

Recent changes to the Plains Zone section of the District Plan will have a positive impact. It is satisfying to see some of the loopholes being plugged. The Society will continue to monitor consent applications and make submissions where necessary.

The Society is not anti-development. We wish to be proactive about future planning

and we have ideas for future expansion and development in the District. But we remain appalled at the way the Council has gone about a project that is in the wrong location. Hastings cannot just keep sprawling onto high-class soils. The District needs a comprehensive plan for the future.

That said, a report has been released by the Hastings Council about the approach to be taken to address Plains development in cohorts with the Napier and Regional Councils. We believe the ingredients required to make decisions on the Plains are already at hand. It is a shame to see \$300,000 being allocated to this project.

The Society is willing to provide suggestions that are workable, show foresight and think outside the square. We intend to approach the Regional Council to instigate dialogue on better recognition of our soil resources. The Society will not go away. The Plains are of national importance and should be secure for future generations.

We welcome new members with an interest in supporting our aims of questioning inappropriate use of the Plains Zone, advocating better planning for Hastings, and recognising the importance of the Plains soils to our economy. Donations are welcome.



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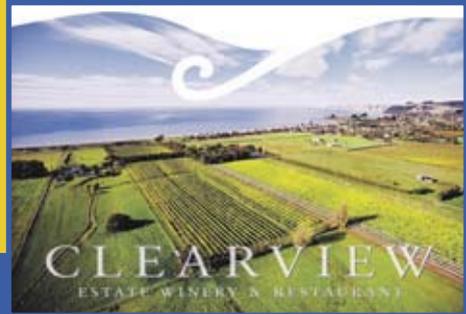




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FILM: EARTH WHISPERERS/PAPATUANUKU
Focusing on 10 visionary New Zealanders, this important documentary is "a unique number 8 wire/Kiwi-style approach to Al Gore's An Inconvenient Truth."
Special HB premier hosted by Sustaining HB Trust, St Columba's House Environment Group & HB Regional Councillor Liz Remmerswall. Refreshments provided.
June 13, 5:45pm. H.N. Cinema Gold. \$16, \$13, \$11. Book through Cinema Gold. Attendance strictly limited.

WORKSHOPS FOR SELF RELIANCE:
Sourdough Bread Making – June 27
Tree Pruning – June 28, 9am-12pm
Sustainable Clothing Reuse & Redesign – July 12, 1pm- 4pm
For more info. on these one-day workshops, contact Enviro Centre.

HASTINGS CITY ART GALLERY

201 Eastbourne Street East, Hastings;
871 5095 www.hastingscityartgallery.co.nz

THE LABOURS OF HERAKLES
by MARIAN MAGUIRE
Lithographs and etchings depicting Greek mythological Hero Herakles as New Zealand colonist. Through 28 June

HE AHO TANGATA: THE HUMAN THREAD
By JOHN BEVAN FORD
Retrospective of contemporary Maori art pioneer with carvings, paintings and sculpture from 1970's to 2005.
June 15 – August 9



HAWKE'S BAY OPERA HOUSE

101 Hastings Street South, Hastings
871 5280 www.hawkesbayoperahouse.co.nz

7th MAORI GAMES COMPETITION – TE REO KORI
Kahurangi Maori Dance Theatre invites you to a community celebration featuring Te Reo Kori games, story telling, music, entertainment, best Rewana Bread competition, best kite competition and more.
June 17, 9:30am-2:30pm. Assembly Hall (next door to Opera House)

HIP HOP DANCE COMPETITION
Guests include Dzhah, Justin Hau and Evolution. For more info:
e-mail elison.kahurangi@xtra.co.nz
June 17, 7pm. \$20 Hawke's Bay Opera House
Book through Ticket Direct or Opera House

HAWKE'S BAY MUSEUM & ART GALLERY

9 Herschell St., Napier
835-7781 www.hbmag.co.nz

LOOK SOUTH – TEXTILES BY CLARE PLUG
Modern art quilts by one of NZ's leading applied Artists. Not your grandmother's quilt show. Through Nov 1.



LAST LONELIEST LOVELIEST – NEW ZEALAND & THE EMPIRE
This exhibition investigates how Empire style objects were used as strategic reminders of 'Britishness'.
Through Sept 13.



LONG LIVE THE MODERN: NEW ZEALAND'S NEW ARCHITECTURE 1904-1984
Exhibition opening July 3, 5:30 p.m.
Floor talk with Douglas Lloyd-Jenkins
July 5, 2 pm.

ROYAL SOCIETY ANTARCTIC LECTURE
Dr. Eric Barnes of Antarctica New Zealand speaks on *Life on the Ice*. July 9, 6 pm.
Century Theatre. Gold Coin.

FRIENDS EVENING LECTURE
Prof. Kay Morris Matthews speaks on *Centre & Periphery of the British Empire: Educated Women Journey abroad 1880-1930*
June 11, 5:30pm. Members: free; Public: \$5

FRIENDS FUNDRAISER LECTURE
Christiane Mortelier, French writer and lecturer will present an illustrated talk on *Monet and the Impressionists*
July 13, 5:30pm. Century Theatre. \$15 (Friends & students: \$10)

CHAMBER MUSIC NEW ZEALAND
Program includes Beethoven, Berio, Poulenc
July 10, 8pm. Century Theatre. \$52.
Book through TicketDirect

THE HISTORY OF JAZZ
Concert by Rodger Fox and the NZ School of Music Big Band features some of NZ's top young musicians playing Blues, Dixieland, Swing, BeBop, and more.
July 17, 8pm. \$20|Century Theatre. Book through Art Deco Trust

LANDMARKS HISTORY GROUP

Meets 2nd Tues each month
Hastings Library. Contact: Michael Fowler
027 4521 056

LECTURE: "APOSTLE" THOMAS TANNER & FAMILY
by Shirley McKay
July 14, 5:30pm. Gold Coin.

LIVE POETS SOCIETY

Open poetry readings. Meets monthly at Hastings Community Arts Center, Russell St, Hastings. Contact: Jenny Dobson
876 3463 jenny-dobson@xtra.co.nz

MONTANA NATIONAL POETRY DAY LIVE
A morning of music, live poetry and tea with guest readers Jenny Dobson, Marie Dunningham, Dr. Bill Sutton & Marvyn Grant. Announcing Montana Poetry Live competition winners. The theme is NOW (submit entries to Creative Hastings PO Box 519 Hastings.
July 24, 10am – noon. St. Lukes Church, Vigor Brown St. Gold Coin.

MATARIKI – FLAXMERE

9th annual celebration hosted by Morrell & Jessup Families. This year's event features dodge ball for kiddies, Rock Station Contest, heaps of Maori kai, lantern procession by Pakipaki School students, over 100 performers and spectacular fireworks.
June 26, 3-8pm. Flaxmere Park
Contact: Jolene Morrell 027 752 1251

NAPIER MUNICIPAL THEATRE

119 Tennyson St. Napier 835 5905
www.napiermunicipaltheatre.co.nz

MISS SAIGON
Napier Operative Society recreates the smash hit musical of tragic romance set in Saigon & Bangkok during the VietNam war. Directed by Jillian Davies.
June 19-July 4; 7.30pm, Sundays 4pm.
Book through Ticket Direct



WAIMARAMA MAORI TOURISM

P 879-9302 M 021 057-0935
www.waimaramaori.com

WALK WITH THE ANCESTORS TOUR
Explore stunning 15th Century Maori ancestral and archaeological site while learning history of the area and how people lived. Not your typical Maori history tour.
Daily, 10am, departing Waimarama.
Phone for tour details & bookings.



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www.baybuzz.co.nz

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