CHEMICAL & GMO APOCALYPSE: INDUSTRIAL BAD SCIENCE, CORRUPTION & FASCISM, PESTICIDE-CHEMICAL-GMO-TRANSGENE-POLLEN-ENDOTOXIN POLLUTION, & HUMAN HEALTH & BEHAVIOR META-IMPLICATIONS

Research Consensus On Pesticide, Endotoxin & Transgene Mobility, Exposures & Toxicity, Environmental Insults, Pandemic Ramifications (Extinction Potential) & Our Dying Civilization. Briefly: The Right Type of Farming & Innovative Non Or Low-Toxic Herbicide Alternatives For Plantations & Crops As A Small, Pleading Signature of Good Sense & Potential.

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This Essay will be periodically updated (comments for improvements welcome).

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"More people have died because of chemicals than during World War II" (Ollivry 2013).

1.0 INTRODUCTION

Pesticides, like nuclear radiation, represent Extinction Level Event (ELE) material toxins and dynamics at work. As scientists, industries and whole consumerist cultures, we have oddly chosen mass morbidity and kill dynamics on so many levels while still professing an opposite desire to somehow evolve into something better. In a swarming corporate rush to power and profit we have side-stepped genuinely sustainable, green and life-giving productive means of development.

Human development is not a straight-line, nor is it simplistic. There exists a hidden confusion of inherent contradiction inside this great story of a so-called ascendant sentient species. And just when we thought we had conquered everything after the

Renaissance, we strangely -- and at this late stage in our advance (or decline) -- chose an ultimate and certain annihilation over life-giving enlightenment. Missed it by much more than "that much".

And, even though this Essay represents a largely physical study of Life and Anti-Life on Planet Earth, we can discern, when expanding our vision out much further beyond our tiny individual lives, that a great metaphysical Death Wish (something well beyond mere temporal human thought) is leveraging frightening unknowns in the lives of all peoples. Hence, the toxins, exposures, sickness and corporate intrigues we constantly study and comment on to the point of tedium.

We must wonder if we are all propelled by irresistible immortal forces to poison ourselves out of existence with nuclear radiation, pesticides, pollution, flouride and GMOs! These exotic substances are attacking the viability of Life On Earth, or reproduction. Rapidly advancing global toxicological signatures clearly show there exists the consistent certainty that immediate and long-term environmental and human health markers are now being diminished across-the-board at an accelerating rate. After-the-fact research cannot keep up with the features of destruction that these immensely toxic chemicals leave in their wake.

We have lost control of our thinking and our technologies. Pesticides (generally speaking, but a little more pertinent to this study: herbicides), migrate to poison the natural environment (especially soils), finding us and poisoning our reproductive and other potentials wherever we are. Hence, the emphasis in this report is on the modern, enhanced potential for famine, pandemic and extinction dynamics. So pervasive is this technological stress, that the revealed extensive damage to our Planet's biosphere demands that we innovate entirely outside industry sentiment and influence, and comprehensively reconstruct the pesticide paradigm (if not all human technological fix conceptualization), using, as a weak base standard at the very, very least, the Precautionary Principle.

Glyphosate, and GMO crops and plantation trees and their associated extensive problems are particularly examined in this study using research that indicates a measure of just the tip of the iceberg in terms of these "Dimensional Rift" kinds of toxic insults on Planetary health. Natural herbicide alternative treatments are briefly addressed.

2.0 ERRONEOUS INDUSTRIAL & INSTITUTIONAL IMPERATIVES

The main (subjective & immediately 'appealing') features and errors in the broad (yet shallow) justification for extensive pesticide (including herbicide) use appear to be:

1. Cosmetic appeal (dead or absent weeds) and the diminishment of weed growth and damage (e.g. along sealed roadsides), even if the

weeds tend to hold the soil together.

2. Pest 'health' concepts and seeming logically reasoned imperatives. The problem here however is that these notions are usually internally flawed because they derive from short-term, symptomatic and technological fix worldviews and responses to multiple other flawed human systems working in concert against human health. Here we witness the broad replacement of a genuinely functional Nature in cities and in agricultural regions, and the loading of these environments with exotic chemicals. These toxic impositions favor ecological dynamics that are well and truly out of balance and distorted with multiple, intertwining chemical and energic insults simultaneously impacting on so many levels and layers of life systems that all we usually end up doing is jumping from one dumb technical quick fix reaction to a stress symptom to another reaction (like experimenting on a patient with medications). There is no real and integrated core sense of order or restitution derived from this materialistic, "one-dimensional", and mechanistic linear thinking style.

3. Assumed crop growth benefits, but without reference to fully informed, ecologically sustainable and critical long-term soil and environmental health imperatives. Here, institutionalized economic, industrial growth, and impatient profit and control worldviews have unfortunately classically worked against planetary health in favor of (again) short-term profitability notions that ignore:
a/ long-term TOXIC outcomes and
b/ longer-term EXTINCTION TRENDS (the latter is automatically seeded by the former).
Critically, spray protocols reference outdated regulatory regimes that are toxicologically and ecologically dumb and inept, and which lead to criminal impositions on human health.

3.0 THE DEVIL IS IN THE SUB-CLINICAL, CUMULATIVE & OVERT POISONING DETAILS (EXPANDING ON THE ABOVE): PESTICIDE MIGRATION, EXPOSURE & HUMAN HEALTH & ENVIRONMENTAL ISSUES

3.1 WE (THE PEOPLE) DIDN'T THOROUGHLY KNOW

Simplistically, second generation synthetic pesticides' (Muir 2012) increasing dominance in the world, and the easy spray regimes and protocols that facilitated their ready commercial/public access and use, essentially formed out of the following very general dynamics (not in any particular order):

a/ Our almost uncensored trust in science's "invisible helpers" (chemicals) on the back of the Renaissance and then the mechanical marvels of the Industrial Revolution (we were a bit innocent and infatuated with ourselves and our inventive capabilities).

b/ Cheaper food (from initial gains made through pesticide use), the availability of apparently effective and inexpensive synthetic pesticides (especially DDT), a lack of documented injuries or deaths, an initial reduction in insect-borne diseases, and apparent safety in contrast to earlier uses of arsenic (Unsworth 2010) were all persuasive arguments in favor of the continuing development and use of pesticides.

c/ The prospect of massive industry profits through quickly applied and quick kill (convenient) chemical 'fixes'.

d/ Then... came industry's (and their growing armies of beholden science and political hordes') avoidance of what they increasingly suspected or overtly knew about chemical toxicities, whereupon developed the necessary "Don't Mention The War" corporate mentality that officially recognized only the deceptive embrace of rosey chemical potentials re-worked or fabricated as spin, often seen as blatant lies in advertising and MSDS's.

Note:

> ...industry regulators in Europe have known for years that glyphosate, originally introduced by American agricultural biotechnology giant Monsanto in 1976, causes birth defects in the embryos of laboratory animals...
>
> Even so, the commission's health and consumer division published a final review report of glyphosate in 2002 that approved its use in Europe for the next 10 years...
>
> ...Earth Open Source said that government approval of the ubiquitous herbicide has been rash and problematic.
>
> "Our examination of the evidence leads us to the conclusion that the current approval of glyphosate and Roundup is deeply flawed and unreliable," wrote the report's authors. "What is more, we have learned from experts familiar with pesticide assessments and approvals that the case of glyphosate is not unusual" (Graves 2011).

Also:

> "We can't figure out how regulators could have come to the conclusions that they did [regarding the safety of glyphosate] if they were taking a balanced look at the science, even the science that was done by the chemical industry itself" (Graves 2011, quoting John Fagan, doctor of molecular and cell biology and

biochemistry, and one of
the founders of Earth Open Source).

e/ Our general and uninformed demands as spoilt consumers for technical/chemical wonders and symptom fixes, and the inherent toxic backgrounds to these synthesized wonders that we (the people) weren't necessarily aware of.

For example:

- lead in paint;
- PCB's;
- DDT;
- Agent Orange;
- Thalidomide;
- Sulfanilamide;
- 2,4-D;
- flouride (see: http://dianabuckland.webs.com/);
- mercury fillings
- Stilnox/Ambien/Zolpidem, Warfarin, Heparin/Lovenox, Pradaxa, Plavix, Paracetamol, Phenazepam (Edlund 2011);
- Propoxyphene/Darvon, Meperidine/Demerol, Guaifenesin/Dilaudid with Hydromorphone, Oxycodone/OxyContin, Tylenol with Codeine, Hydrocodone/Acetaminophen/Vicodin/Norco (Stoppler 2014);
- NSAIDs or Advil/Aleve/Ibuprofen/Naproxen, Cox-2 Inhibitors or Celebrex/Celecoxib (Collins 2011);
- Vioxx, etc.

See "NIOSH List of Antineoplastic and Other Hazardous Drugs in Healthcare Settings 2012" at: http://www.cdc.gov/niosh/docs/2012-150/pdfs/2012-150.pdf. See also the huge listing of medications associated with heart attack at: http://medsfacts.com/reaccover.php?pt=ACUTE%20MYOCARDIAL%20INFARCTION.

However, we should have cautiously and intelligently realized a long time ago, as we began pumping millions of pounds of pesticides into the environment, that the toxics that didn't obediently stay put at the application site went somewhere (migrated), and did something (poisoned other things), and often persisted and then bioconcentrated (built up in an organism's tissues), and biomagnified (amplified in concentration up the food chain) (Muir 2012), and even became something else (changed into even more toxic "metabolites"). Since we ultimately sprayed pesticides onto the ground, at the very least we should have suspected that: "Pesticides and fertilizers applied to lawns and crops can accumulate and migrate to the water table" (Source: http://ga.water.usgs.gov/edu/groundwater-contaminants.html). We should have been much more protective and anticipatory regarding the health of our groundwater and our rivers.

I would suggest that a water table and its associated streams are in a state of constant interplay. Further, and dismissing for the moment the concept of chemical diffusion that sees toxins migrating uphill in plumes and even AGAINST water flows (see Endnote #1), the

state of a river DOWNSTREAM from a herbicide spray application site must be considered in terms of applied (escaped) chemical affecting wildlife and aquatic life, including platypus (in Australia) and fish stocks. Here, outdated or orthodox/traditional toxicological regulatory regimes tragically fail to anticipate new understanding and thereby continue to allow pesticides to be used almost universally with few real (substantial) restrictions:

> "Pesticides are having an effect at 10 to 100 times lower concentrations than traditionally thought," says Kefford.
>
> He says when authorities try to protect our streams and rivers from pesticides they rely on thresholds, under which it is assumed pesticides have no effect.
>
> For example, the European Union recommends the use of a commonly-used safety factor of 100.
>
> This means if a negative effect on an aquatic organism is only seen at a particular concentration of pesticide, then a safe level of that pesticide is regarded as being one hundredth of this concentration.
>
> But, says Kefford, the latest evidence suggests that this safety factor is too small (Salleh 2012).

Further:

> Rachel Carson in Silent Spring in 1963 warned us many years ago about the damaging and unimagined effects wrought by very low level original applications of poisonous chemical substances, such as DDT, entering the food chain. We now know that it is worse even than that. Even minute doses, that appear to be safe to humans, accumulate through prolonged usage to toxic levels, and worse, interact to cause epigenetic cancers and other pathologies. Government testing does not take these cumulative and epigenetic effects into account ñ and it should.10 (Bound, Biggs & Obendorf 2012).

The above understanding more than strongly suggests that a much larger and broader burden of sub-surface morbidity exists (at least initially as a silent epidemic of sub-clinical poisoning presentations) as a direct and evolved function of an infinite number of small, cumulative exposures to pesticides and other industrial toxins. As well, this much more informed comprehension

and acceptance of the deadly reality of technological poisons demands that all pesticide use be severely reduced, if not completely eliminated, immediately and globally. Therefore, all spray regimes need to be thoroughly reevaluated and reconfigured in terms of the CERTAINTY of life-form poisoning and compromise by pesticide.

Expanding: short-term spray drift and long-term vapour drift or volatilization, surface flow transport and groundwater/underground water contaminant transport, chemical diffusion and intrusion/ trespass onto properties adjacent to spray sites (especially pesticide-chemical diffusion and environmental trespass into residential concrete slabs) should be recognized as a "given".

We didn't know:

> ...in a large population with an increasing number of chemicals, there will come a point at which the least protected (biochemically) will be adversely affected while others are not. As the dosage increases, greater numbers will be affected, in ways no longer defined by the toxicity of the individual chemicals (Donohoe 2008).

In other words, there will be synergies amongst the chemical contaminants. The "adversely affected" have what is often called Multiple Chemical Sensitivity. It is worthwhile here to explain this condition in some detail:

> Multiple Chemical Sensitivities (MCS) is an acquired condition in which the sufferer becomes sensitised or abnormally reactive to volatile chemicals following prolonged, recurrent or high dose exposure to volatile chemicals. The most distinctive symptom is "cacosmia", or a heightened sensitivity and lowered threshold to odours that most of the population find inoffensive or would not notice.
>
> Multiple chemical sensitivities is a condition that primarily affects the nervous system, particularly the brain, and most often has characteristic symptoms, including:
>
> * decreased short term memory,
> * poor concentration,
> * weakness,
> * fatigue,
> * dizziness, and
> * altered emotional states (emotional lability, often oscillating between anxiety and depression).

Recent published studies demonstrate alterations of SPECT brain scans, central evoked responses (especially visual and auditory), and altered autonomic nervous system function. The mechanisms of such damage remain unclear at present, but direct neurotoxicity is regarded as the most likely cause. There is no current evidence that the condition is reversible, and MCS appears to represent a form of subtle toxic brain damage with the potential for lifelong disability.

The sufferer's history and clinical state should meet the criteria laid down by Cullen et al, that multiple chemical sensitivities is "... an acquired disorder characterised by recurrent symptoms, referable to multiple organ systems, occurring i[n] response to demonstrable exposure to many chemically unrelated compounds at doses far below those established in the general population to cause harmful effects. No single widely accepted test of physiologic function can be shown to correlate with the symptoms (Cullen M. R. The worker with multiple chemical sensitivities: An overview. Occup Med 1987;2: 655-661). (Donohoe, No date).

And:

This and subsequent publications suggest that the critical defining features of multiple chemical sensitivities are that:

* it is an acquired disorder;
* sufferers have recurring symptoms;
* symptoms involve more than one organ system;
* reactions and exacerbations are triggered by many chemically diverse substances;
* reactions persist after separation of the person from the original causative agent(s);
* reactions and exacerbations occur at very low dose of exposure. (ibid.)

These chemical mobility, exposure and injury truths further demand the heavy, indeed single-minded, promotion of any viable and non-toxic pesticide alternative technologies.

As well, this level of commitment would represent an informed level of innovation and a conscience-driven revolution that, of course, contradicts a mountain of institutionalized inertia, comfort and vested interests. It represents: "systemic changes needed to

protect future generations" (Sutton 2009:8) and "...a paradigm shift in the field that integrates various disciplines involved in the study of environmental contamination..." (Crews & Gore 2011).

3.2 WE DON'T WANT TO KNOW

Pesticide mobility, exposures and injuries sit very uncomfortably with industry (although not as uncomfortably as with those, like me, who have been rendered permanently chemical sensitive. Industries don't want to know about chemical toxicities or, better put, don't want WE the public to know.

3.2.1 BURIED PROBLEMS

However, for the sake of knowledge (let alone justice) past spraying incidents need to be "dug up" (a bit like landmine reclamation...). Note the movie "Erin Brockovich". Pesticide release and associated injury complications should be evaluated in terms of testing for spray residues and metabolites in any drinking water source. Some companies in Australia test water sources at the Australian Government Analytical Laboratories, but what standards do AGAL administer?

I wonder if, ideally, pesticide residues and possible metabolites should be at least partially identified/calibrated prior to water/soil sampling (with appropriate lab work in relation to local meteorological, plant, soil and geological conditions) so that soil and water analyses is more effective (knowing what to look for, as well as being flexible enough -- given the test trials and implications -- to be able to identify possible new or unanticipated pesticide-geological chemical combinations and metabolites).

It should be noted here that the Earth's crust goes down a long way, and great ignorance exists as to geological and plant/animal/other lifeforms at these lower depths. Suffice to say that pesticide infiltration at these depths will not enhance any aspect of "Life Below Earth", and that we have already lost much unrecoverable knowledge in terms of deep-life geological conditions by virtue of profoundly intrusive planetary pollution.

3.2.2 EPIDEMIOLOGY

Any concerns over indications of the potential poisoning of residents adjacent to spray locations should be followed up by epidemiological and other surveys (hospital admissions, medical records, interviews, etc.). This occurred in terms of the Castlereagh Human Health Study (http://poisoningandlegalaction.com.au/global/MAIN-Global-Toxicity-Chemicals_A-Worldwide-Nightmare.pdf), which was done in Sydney in relation to pronounced animal and human morbidity surrounding the

then named Castlereagh Liquid Waste Disposal Depot (now Castlereagh Waste Management Centre).

Although the Report was something of a whitewash, the correct statistics (ignored by the Report) showed there existed statistically significant morbidity in human populations, particularly between the waste depot and the Hawkesbury River (where the liquid waste plumes tended to move). Landholder experiences over extended time demonstrated clear problems with domestic and farm animal health (particularly after rain where raindrop impact caused burning lesions on animals' legs and profound levels of stress to the point where a horse impailed itself on a fence while being "burned" [M. Streicher, pers. comm. 1995]). These toxic outcomes were supported by University of Western Sydney Degree student bore water testing showing excessive cadmium levels (Thompson, et.al. 1998) and a later assessment of professional bore water test results (Thompson 1998/2010). And although Epidemiology is a difficult discipline: "Epidemiologists sum it up this way: If they can detect a problem, you know you have a true catastrophe" (Heath 2013).

Of course surveys and studies further alert people to class action scenarios in this unfortunately litigious society, so would be unlikely to be carried out voluntarily by industry. Public upset usually has to motivate those who seek your votes to get a study underway.

In terms of your own local information gathering, one could pick up valuable clues from visitors to your area of chemical contamination concern. Ask them if their children, while holidaying or visiting in that area, have exhibited the classic symptom of pesticide poisoning for kids: anomalous abdominal pain (Dr. Brendan Grabau 2005, pers.comm.). Ask this anyway regarding permanent residents. Their children could generate a trend in abdominal pain that can indicate long-term problems that need investigating. If they haven't demonstrated these symptoms, however, the new toxicology still does not discount the possibility that poisoning has occurred, but that symptoms have been masked by presenting as sub-clinical. This is importantly understood now, as well as the cumulative and synergistic effects of multiple tiny exposures to multiple toxins over extended time.

Why did the discipline of toxicology have to change in recent years?

> ...the current system is not based on fundamentally sound science. Our existing commercial and regulatory enterprises are all geared to produce and to accept descriptive data from high dose animal tests... (Boekelheide 2008).

The next part of this same quote is wrong:

> ...and the process of interpreting this information has, to

a large extent,
effectively protected our health and safety for many decades (ibid.).

Why wrong?

As of 2005, there were 82,000 chemicals in commerce, with approximately seven hundred
new chemicals being introduced per year.[4] There is little publicly available safety
data for most of these chemicals, and many of them are produced in quantities of a
million pounds or more per year (Zurlo 2012; referencing at [4]: National Research
Council, Toxicity Testing in the 21st Century: A Vision and a Strategy (Washington,
D.C.: National Academies Press, 2007)).

The new toxicology regime will involve:

...toxicity testing based on human cell systems that will be more predictive, have
higher throughput, cost less money, be more comparable to real-life exposures in
humans, while using many fewer animals. This vision, embraced by leading scientific
and regulatory groups, is a paradigm shift from animal-based to human-based testing
that signals a major change in focus and promotes the development of new approaches to
understanding the toxicity of chemicals in humans (ibid.).

Further:

The old paradigm, developed over four centuries ago by Paracelsus, was that ëthe dose
makes the poisoní. However, for exposures sustained during early development, another
critical, but largely ignored, issue is that ëthe timing makes the poisoní. This
extended paradigm deserves wide attention to protect the foetus and child against
preventable hazards (Grandjean, et. al. 2007).

Or, in more detail:

...a growing number of studies show that many environmental toxicants can have
significant consequences, including dysfunction and disease, at very low-level
exposures. Many of these low-dose studies (including with the pesticides
hexachlorobenzene and atrazine) demonstrate that "the timing of exposure is critical

to the outcome and that exposures during early life stages (fetal, infant, and pubertal) are particularly important. This recognition of critical windows of vulnerability not only demonstrates the developmental basis of disease but also that the timing, as well as the dose, makes the poison." In addition, the effects of environmental toxins on the human hormone system, for example, are frequently non-linear such that "high doses may not be appropriate to predict the safety of low doses when hormonally active or modulating compounds are studied." Birnbaum describes this body of research as responsible for disruptive "paradigm shifts in our understanding of the relationship between environmental toxicants and disease" (Quotes and information attributed to Linda Birnbaum, Director of the National Institute of Environmental Health Sciences; Pesticide Action Network Updates Service (PANUPS) 2009).

As noted above, an epidemiological survey can uncover statistically significant burdens of chemically-induced morbidity (the disease state of an individual or the incidence of illness in a population), however LITIGATION REPRESENTS SUCH AN EXCEPTIONALLY UNTIDY, CONFLICTUAL AND ADVERSARIAL POTENTIAL THAT ALL EFFORTS SHOULD GO INTO THE R&D OF ALTERNATIVE WEED ERADICATION METHODS RATHER THAN PAYING FOR THE COLLEGE EDUCATIONS OF LEGAL TEAMS' CHILDREN.

3.2.3 NO REGULATION, NO CONTROL, NO SENSE

As industries and businesses and even whole techno-driven cultures, we may find it inconvenient to recognize the weight of scientific evidence in favor of the toxicity and uncontrollable nature of pesticides, nevertheless the following should prompt any NORMAL human being (one who is not insanely predisposed to putting industrial vested interests or employment ahead of the health future of their progeny and the ecological integrity of this planet) to seriously question our pitiable love affair with these deadly substances:

> (Reuters) - Atrazine, one of the most commonly used and controversial weedkillers, can turn male frogs into females, researchers reported on Monday (Fox 2010).

Given this DISTURBING type of toxicity, just how smart are we, really, as a supposed sentient species?:

> ONLY one in every 100 of the 50,000 industrial, agricultural and veterinary chemicals

> available for use in Australia today has ever been tested for its potential danger to people's health and the environment (Jopson & Pollard 2007).

In the US:

> 90% of 23,971 PMN [new chemicals still within the Premanufacture Notification process] chemicals approved by EPA between 1976 and 1994 were approved with no restrictions on their proposed use and production and with no requests for additional test data, regardless of the amount of data submitted (Chemical Industry Archives 2009).

Further:

> In practice, almost 80% of chemical additives directlyóintentionallyóadded to food lack the relevant information needed to estimate the amount that consumers can safely eat in FDA's own database and 93% lack reproductive or developmental toxicity data, although FDA requires feeding toxicology data for these chemicals (Neltner, Alger, Leonard & Maffini 2013).

And:

> Eight chemicals have been under review by the Australian regulator the Australian Pesticides and Veterinary Medicines Authority (APVMA) for more than 13 years, and some up to 15 years, with use continuing in the meantime (News.com.au 2011).

In Tasmania (Australia):

> "State chemical use rules are so lax on approvals and policing, such that it may not be known which lands or land-owners have been recent users of a detectable chemical ... What is more important – bureaucratic convenience, political embarrassment or community & environmental health?" (Quote attributed to Dr. Leaman; SourceWatch.org 2013a).

Small wonder that the following is typical of our chemical experience:

> At least 17 pesticides are suspected carcinogens, and 48 have been flagged as potential endocrine disruptors which can interfere with

hormones in animals and
humans, leading to birth defects and other developmental disorders (ibid.).

Further:

> False claims about the safety of pesticides, combined with flaws in the federal registration process, raise serious concerns about increased exposure to environmental chemicals, when there is lack of information on their reproductive and endocrinological effects, synergy, bioaccumulation, and continual low-dose exposure (Knight 1997).

And:

> ...policy makers in other countries trust FDA and wrongly assume their assessments are valid. Theyíre disproved when independent studies are matched against industry-run ones. The differences are startling. The former report adverse affects while the latter claim the opposite. Itís no secret why. Agribusiness giants allow nothing to interfere with profits, safety is off the table, and all negative information is quashed (Lendman 2014).

And even if some regulators maintained at the very least a better appearance or semblance of genuine 'control' over substances that, by their very nature, are utterly UNCONTROLLABLE once released to the ground, water and winds, not all regulators or countries necessarily show the same levels of... intelligent concern and restraint?:

> A so-called expert independent panel for FSC International has again changed the criteria for determining which pesticides should go on the FSC 'highly hazardous' or HHP list. As a result, simazine and terbuthylazine have been removed from the list and no longer require an FSC derogation for use in plantation establishment...
>
> The author also notes that the FSC has listed online a proforma for comments on the latest parameter revisions to be submitted by early August, yet the May document is stated Final Report. That suggests that the FSC is not serious about external input, or the May document would be a Draft. This sort of behaviour and the notification

> failures are perfidious and arise, in the author's opinion, from the over-riding arrogance of the FSC and their refusal to acknowledge external criticism...
>
> The second new listing example is ludicrous. The chemical is azafenidin, developed by DuPont, but it was withdrawn globally over a decade ago, when the US EPA identified a secondary metabolite harmful to female reproductive health. It is on the Superseded List in the British Crop Protection Council's Pesticide Manual. A search did not reveal any evidence that it has been re-introduced. The FSC's listing is not simply inane, it is insane.
>
> There are numerous other examples in the latest listings where a single parameter is used to justify the inclusion, but often there are over-riding factors including other parameters that are ignored.
>
> Clearly, the armchair idealogues working with the FSC have bastardized the science (Tomkins 2013).

And in (forum) response to the above article:

> These chemicals are not dangerous to trees but only to people. FSC certifies forests not human beings. Why should FSC care if its global genetically-modified tree plantations are sprayed with chemicals that turn boys into girls? (Stevens 2013; my [ ] emphasis).

However:

> After many years of community outrage over the use of biocide chemicals in commercial forestry, the Tasmanian government initiated a quarterly water monitoring program for 55 rivers, with 19 chemicals tested... The transport of chemicals resulting from aerial chemical spray drift and contamination of both ground and surface water has been highlighted on numerous occasions (SourceWatch.org 2013a).

If only our stewardship of this planet was fully, ecologically sound. That means NOTHING gets poisoned. Note on page 2 of the document, http://www.twff.org.au/documents/twffprosilvapol.pdf (accessed: 6 Feb. 2014):

With regard to the general principles of sustainability, the following are essential
elements of the productive function:
ï Maintenance of the soil fertility
ï Guaranteed continuity of the forest ecosystems and timber production
ï Maintenance of the natural energy and mineral cycles...

Note:

India is one of the world's largest users of pesticides and a highly profitable market
for the corporations that manufacture them. Ladyfinger, cabbage, tomato and
cauliflower in particular may contain dangerously high levels because farmers tend to
harvest them almost immediately after spraying. Fruit and vegetables are sprayed and
tampered with to make them more colourful, and harmful fungicides are sprayed on fruit
to ripen them in order to rush them off to market...

Kasargod in Kerala is notorious for the indiscriminate spraying of endosulfan. The
government-owned Plantation Corporation of Kerala aerially sprayed the harmful
pesticide on cashews for a period of over 20 years. Consequently, it got into rivers,
streams and drinking water. Families and their children have been living with
physical deformities, cancers and disorders of the central nervous system ever since...

According to the writer Marie-Monique Robin, whoever controls the food (and pesticide)
business controls the world. And Monsanto, backed by the US Government, is setting
out to do this through its genetically manipulated (GM) seeds and its pesticides and
weedicides.

This is the company [that] has been responsible for manufacturing polychlorinated
biphenols that cause cancer, dioxins that lead to chloracne, GM bovine growth hormone
that produce mastitis in cattle and genetically modified organisms containing insect
toxins, including GM corn, GM soya and Bt cotton, which are strongly associated with a
range of health hazards. It also produced Agent Orange which the US dropped on
Vietnam to destroy jungle and consequently led to mass death, disease and
deformities. In June 2001, adding insult to injury,

Monsanto was accused by farmers
of Ninh Thuan province of pressuring them to use genetically modified seeds that
resulted in corn and maize crop failures and economic ruin. In Indonesia, the
corporation bribed more than 140 government officials to have its Bt cotton released
without an environmental risk assessment (Todhunter 2012).

Also:

...pesticides are strongly linked to birth defects... science will not solve this
problem for us. Isn't it time to consider a human rights approach, an ethical
challenge to the poisoners?... The old science-based strategy has failed us. Perhaps
a new, precautionary path can get us where we need to go. The precautionary principle
says, 'When an activity raises threats of harm to human health or the environment,
precautionary measures should be taken even if some cause and effect relationships are
not fully established scientifically' (Montague, 2001).

Or, put slightly differently, the Precautionary Principle:

...or precautionary approach states that if an action or policy has a suspected risk
of causing harm to the public or to the environment, in the absence of scientific
consensus that the action or policy is harmful, the burden of proof that it is not
harmful falls on those taking an action (Wikipedia 2014a).

So, how does Big Biotech manage to sideline the Principle?

Big Biotech has effectively been in the same position that Big Tobacco was in previous
decades ó able to defend themselves with the "there's no conclusive link" argument
that sidelines the precautionary principle to embrace the cost-externalising
rationalisation that's typical of the corporate world (Mackintosh 2011).

"There's no conclusive link" means... We don't want to know, we don't want YOU to know.

3.3 THE SLOW, CONSISTENT DEATH PLAN/STRATEGY IN IT'S MANY FORMS

There exists in this world powerful forces pushing us toward the

full expression of a background totalitarian scheme embracing all life-forms. It is a gradualistic scheme in terms of its expression over extended time, and it takes on many forms.

3.3.1 META TREND: BACKGROUNDER

And, while Big Poison classically and weaselly obfuscates their monumentally heavy responsibilities through the exhausting repetition of "a universal propensity to radical evil" (Hanson, No date), it excitedly, resolutely, incomprehensibly, and VENOMOUSLY acts on extinguishing viable human life on Earth. Herein lie core attitudes (amplified today way beyond the norm for human greed and unexamined thought), central themes of corporate expansionism that have classically worked for the over-ripe development and calling in of the use-by date of every past civilization.

This essay -- while focusing most intently on the material extinction trends set in place by toxic technologies -- also maturely posits the existence of a hyper-conflictual background meta trend, or a coherent and motivating background theme, dynamic, or causal agent facilitating a human history of negative outputs: illness, shock, accidents, grief, divorce, marriage..., misunderstanding, hatred, conflict, aggrieved good, greed and corruption of power, violence, rape, psychological abuse, poverty, inequality, vested interests, conflicts of interest, perverted legal and judicial systems, egoism, loss of potential and opportunities, injustices, ignorance, deception, injuries, accidents, Great Disappointments, cultism, murders, wars, genocide, extinction/death (somewhat like moral physical and metaphysical evil [http://www.philosophyonline.co.uk/oldsite/pages/evil.htm]).

"Nothing will shake a man-or at any rate a man like me-out of his merely verbal thinking and his merely notional beliefs. He has to be knocked silly before he comes to his senses. Only torture will bring out the truth. Only under torture does he discover it himself" (C.S. Lewis, A Grief Observed).

This transcendent-historical meta trend is CONSISTENT over time, extending beyond the limitations of individual human life (our minds appear to have been hacked for millennia). It demonstrates a pattern of evil intent and forethought, execution and maintenance, and power. It is descriptive of a PLAN. Most people living temporal and difficult lives are generally largely unaware of meta themes that stand outside of human mortality. Consistent and acute themes of shelter, family, security and survival; and worse: advancement, accumulation and greed; and worse still: empire, are all set against the distressing prospect of advancing age and debility and the growing potential of permanent injury (such as stroke) or sudden death, all make their mark on overburdened minds, so this leaves precious little room for the development of mature meta-thought that stands outside of individual material life and, indeed, the human presence on this Earth.

However, with observation, converging weights of congruous, repeating and reproducible evidence demonstrate the existence of toxic meta themes even in the essential violence of Nature, and especially inside human thought (especially, again, corporate cognition), themes and powers balanced by heavy and deliberative censorship working against chaos and utter annihilation. The emphasis and nature of those toxic themes also tend to demonstrate how close to the end of a civilization the themes portend. Some of the more obvious evidences are:

a/ The appearance and now total loss of control of nuclear technology: note the immeasurable contamination spreading out from Fukushima (see: http://www.ibtimes.com/fukushima-radiation-now-global-disaster-japan-finally-asks-world-help-two-years-too-late-1416058, http://airth.org/fukushima/index.htm and especially: http://www.scoop.it/t/mapping-participating-fukushima-radiation-maps/ and http://buzz.naturalnews.com/000021-Fukushima-radiation-Pacific_Ocean.html).

b/ Massive increases in exotic and synthetic chemical usage, especially the amplifying use of pesticides and concomitant diseases, and then also the diminishment or outright destruction of sociological (especially farming) frameworks (especially seen in India and anywhere where small farms are replaced by Big Ag), the pandemic of toxic insults arising from MASS MEDICATION such as flouridation (see: http://dianabuckland.webs.com/) and chlorination, and especially again the pesticidal emphasis on the planet killer chemical, glyphosate.

c/ The even more insidious development of corporately sponsored and empowered aberrant thought resulting in the hideously irresponsible insertion of GMOs into world food chains. These GMO contaminants favor:
ï an inexorable and unavoidable decline in human health, including resurgent old
diseases and anomalous new diseases (suggestion: do a Google Search on "Has Polio
Returned To The US?", and also see: http://www.twnside.org.sg/title/healt-cn.htm &
http://www.abc.net.au/unleashed/2749484.html);
ï declines in the quality of human mentality (rage, and criminal/sociopathic behavior
[Hatherill 1999]) and diminished and distorted reproductive coherence
[see: http://www.akaction.org/tackling_toxics/body/reproductive_health.html and
http://www.mnn.com/family/babies-pregnancy/blogs/how-chemicals-affect-your-
reproductive-health]).

It is almost as if the last two developing extinction measures listed above (b/ and c/) filled in for a strategic gap formerly left somewhat vacant after the temporary demise of the Cold War. Global quick kill measure potential, such as Mutually Assured Destruction

(M.A.D.) nuclear warfare declined at that point.

However, this deficit was then slowly and very effectively compensated for by industrially-fueled widespread mass medications such as pesticide, flouridation and water sanitization experiments on all and sundry (human guinea pigs) in terms of devious appeals to food production needs, and environmental and human health imperatives. The attitude was: we don't know the long-term effects of these medications, but let's apply millions of pounds of the toxics anyway and make lots of profit to funs our elite lifestyles.)

Eventually new, sparkling and ascendent glyphosate and GMO technologies have taken center stage in this hateful global play that chemically excoriates real victims. And now, today, we also see the results of the steady revival of the great nuclear threat with the bleeding of nuclear materials (Fukushima) and technologies well beyond the borders and former exclusivity of old nuclear powers (USSR, USA, India, etc.) and into the arms of multiple terrorist threats.

With inevitable crop nutritional declines factored into pesticide contamination and GMO toxicities, the industrial slow death strategy satisfies the needs of any demonically backgrounded, but human-mediated Extinction Level Event worth its salt: that multiple overlapping impacts of these types will ultimately engage massive redundancy through parallel and synchronous appearances of global deficits such as famines and pandemic plagues as an automatic consequence of the metaphysical prompting and perversion of history and the decline of whole cultures.

I imagine that the host of deluded industrialists and elites currently trying to take over the world and clinically control all weather, food, water and life (via chemtrails, Big Ag and shadow depopulation) incidentally manage to rationalize the profound conflict they have authored by proxy: that their health, lifestyle and favored progeny will still amazingly manage to (somehow) manifest and optimize from within a shattered global environment and dying world; and their massive profits will (somehow) continue to obediently and mysteriously hemorrhage into their bank accounts, while they and theirs remain (somehow) toxicologically untouched in their penthouses consuming, of course (somehow), only organic, healthy and uncontaminated produce. Incomprehensible and internally conflicted domination and poison strategies, all the while while they defile.

A long-term industrial slow death meta strategy (or, in more materialistically defined terms: a perfectly consistent and generationally repeating 'accident' or disease of human nature)? These kinds of 'accidents' and developments usually end up with pogroms and concentration camps. How long before we see the complete censorship of the Internet in favor of industrial interests, and even multiple assassinations of white environmental activists (see: 3.3.3, below)?

3.3.2 META TREND: TOXIC AG'S BAD SCIENCE & BAD BEHAVIOR

What other evidence could be slowly introduced to support this meta notion?

Starting off, somewhat materialistically:

> Another 200 chemicals are known to cause clinical neurotoxic effects in adults.
> [p.2167]

> The combined evidence suggests that neuro developmental disorders caused by industrial chemicals has created a silent pandemic in modern society. Although these chemicals might have caused impaired brain development in millions of children worldwide, the profound effects of such a pandemic are not apparent from available health statistics. Additionally, as shown by this Review, only a few chemical causes have been recognised so the full effects of our industrial activities could be substantially greater than recognised at present.
>
> The consequences of a pandemic of developmental neurotoxicity extend beyond descriptive data for incidence and prevalence of clinically diagnosed disorders.1,3 Increased risk of Parkinson's disease97 or other neurodegenerative diseases98 is a further potential consequence of the pandemic. [p.2174] (Grandjean & Landrigan 2006)

What's that? A hint? A neurotoxic dumbing-down of society? Surely noone could actually plan THAT?

And:

> An article in the journal Hortscience in 2009 indicated falling nutritional values as a result of industrialised agriculture, and various studies point to the health risks from intensive, industrial methods as chemicals and the impact of genetic modifications become prevalent within the food chain...
>
> There are also concerns over dead soil. The Navdanya organisation in India found that Bt-cotton had significantly reduced vital soil enzymes and bacteria, so much so that within a decade of planting GM cotton, or any GM crop with Bt genes, the destruction

of soil organisms could be complete, resulting in dead soil unable to produce food.
[see Endnote #2 for explicit details]

The biggest beneficiaries of what is currently happening are the likes of Monsanto,
Syngenta and Cargill and the associated pharmaceuticals industry, which rakes in
massive profits from trying to 'cure' us of the resultant diseases. Look no further
than the 2009 documentary 'The Idiot Cycle' to see the link. The biggest losers are
ordinary people and our health along with the many Indian farmers in particular who
have been forced into debt and committed suicide en masse (Todhunter 2012).

And THERE'S the perfect clue for the perfect dynamic of the perfectly continuing pay packet: Create disease (and helpful intellectual dumbing-down) through aberrant human hygiene, mass medication and agricultural/GMO technologies, and then offer expensive symptomatic pharmaceutical relief for the accelerating explosion of morbid symptoms amongst the cannon fodder. The perfect pitch sales circle. Chemicals + Wrong Information = Delusion & Ignorance = Wrong Choices = Disease = Appeals To Symptomatic Relief & Toxic Medication Prescriptions & Mega-buck Sales = More Disease = Mega-Mega-buck Sales = Elite Lifestyle (& Organic Food) For The Elite Only. Therefore, no natural cancer, Alzheimer's, arthritis, MS or other cures are permitted inside this exotic chemical paradigm.

And:

When India's seed economy was forced by the World Bank to become globalized in the
late 1990s, economic conditions within the nation's agricultural sector almost
immediately took a nosedive for the worst. ...nearly 25 years later, the devastating
effects of this corporate takeover of Indian agriculture has resulted in countless
suicides, 200,000 of which have occurred just in the past ten years. ...many Indian
farmers have lost their farms and land over the past several decades. One of the
primary causes is failed investments by farmers that banked heavily on the success of
newly-introduced GM crops. Multinational biotechnology giants like Monsanto and
Syngenta promised farmers that GM crops would bring incredible yields at lower costs,
and save the country from poverty. But in reality, many of the crops ended up
failing, leaving millions of Indian farmers with absolutely

nothing (Huff 2011).

And when farmers and farms fail, it is easier to come in and grab the land:

> State and private investors, from Citadel Capital to Goldman Sachs, are leasing or buying up tens of millions of hectares of farmlands in Asia, Africa and Latin America for food and fuel production. This land grabbing is a serious threat for the food sovereignty of our peoples and the right to food of our rural communities (farmlandgrab.org 2010).

Also:

> Every day there are new stories of companies buying up farmlands. Malaysian palm oil giants buying up lands for plantations in West Africa. Wall Street bankers taking over cattle ranches in Brazil. Saudi businessmen signing land deals in the Philippines. The latest dataset on land grabs claims that 10 million hectares of land have been grabbed by foreign companies on average every year since 2007.
>
> The result is that a small number of people are taking over more and more of the world's farmlands, and the water that goes with it, leaving everyone else with less, or none at all. As the world plunges deeper into a food crisis, these new farmland lords will hold sway over who gets to eat and who doesn't and who profits and who perishes within the food system (GRAIN 2012).

Corporate fangs dripping blood...

And, even more to the GMO point:

> Fresh doubts have arisen about the safety of genetically modified crops, with a new study reporting presence of Bt toxin, used widely in GM crops, in human blood for the first time.
>
> Genetically modified crops include genes extracted from bacteria to make them resistant to pest attacks.
>
> These genes make crops toxic to pests but are claimed to pose no danger to the

environment and human health. Genetically modified brinjal, whose commercial release
was stopped a year ago, has a toxin derived from a soil bacterium called Bacillus
thuringiensis (Bt).

Till now, scientists and multinational corporations promoting GM crops have maintained
that Bt toxin poses no danger to human health as the protein breaks down in the human
gut. But the presence of this toxin in human blood shows that this does not happen
(Sharma 2011).

And, even MORE to the utterly irresponsible and corrupt conflicts of interest GMO dynamic:

This technology is being promoted, in the face of concerns by respectable scientists
and in the face of data to the contrary, by the very agencies which are supposed to be
protecting human health and the environment. The bottom line in my view is that...
(Quote attributed to Dr. Suzanne Wuerthele, US Environmental Protection Agency (EPA)
toxicologist; EuphoricOrganics, No date).

Continuing the above quote:

...we are confronted with the most powerful technology the world has ever known, and
it is being rapidly deployed with almost no thought whatsoever to its consequences
(Quote attributed to Dr. Suzanne Wuerthele, US Environmental Protection Agency (EPA)
toxicologist; Marsh, No date).

And, even MORE to THE health authority and corporate link theme:

More seriously, in 1989 there was an outbreak of a new disease in the US, contracted
by over 5,000 people and traced back to a batch of L-tryptophan food supplement
produced with GM bacteria. Even though it contained less than 0.1 per cent of a
highly toxic compound, 37 people died and 1,500 were left with permanent
disabilities. More may have died, but the American Centre for Disease Control stopped
counting in 1991 (Organic Consumers Association 2006).

And the wider environment consideration:

The introduction of crops genetically engineered to tolerate

glyphosate poses an
additional threat to plant wildlife. Some crops have wild relatives with which they
can cross pollinate. There is therefore a risk of introducing engineered genetic
material into the wild population (Buffin & Jewell 2001:22).

AND, EVEN MORE TO THE GMO POINT:

The failure to test may provide some protection in the courts against lawsuits by
those maimed or crippled by the foods. Most ill effects from food and allergies are
not easily quantified until after the disaster. At best, there may be a small but
marked increase in autoimmune disease and allergy associated with the foods. At worst,
major outbreaks of illness could be observed and will be difficult to trace to the
unlabelled foods (Quote attributed to Prof. Joe Cummins, Professor Emeritus of
genetics at the University of Western Ontario; ibid.).

And beyond...

This bad science has become both master and handmaiden to unaccountable business
corporations driven solely by profit. Together, they will effectively control every
aspect of our lives, from the food we eat to the healthcare we can have, the babies we
can conceive and give birth to, the human beings we can clone. In the process, they
may ruin our food supply, destroy biodiversity and unleash pandemics of drug and
antibiotic resistant infectious diseases. They will also undermine every single moral
value and ideal that makes us human (Ho 2000).

The above just touches on the subject of GENETIC ENGINEERING CREATING BIOWEAPONS (see: http://globalresearchreport.com/2014/01/04/whats-the-scoop-on-genetically-engineered-and-pandemic-viruses/#sthash.ldoAy31M.dpbs; accessed: 2 Feb. 2014), and expands on the industrial slow death meta strategy of the Perfect Circle. Note:

Bioterrorism exists, perhaps, because science promotes it with genetic engineering
research! Ever think of it that way? Humankind, including technology scientists,
need to evaluate where technology is taking us because civilization can be sacked
either by accident, inadvertent scientific snafus, or sheer and deliberate design.

> That apparently has happened before, as civilization is a continuum, which science and humans ought to consider seriously from some ancient civilizations' texts (Frompovich 2014).

So, now, massive corporate greed in terms of 'small' plans like owning all food production and water distribution can be augmented by visions of total Earth ownership and stewardship through planetary bio-engineering, and indeed bio-anything (1), so bioterrorism can now be obliquely inserted into the elites' we-own-all-your-asses 'skillset' as yet another means by which the total destruction of a whole Planet can be masterminded, but somewhat below the level of critical, intellectual, activist and immersive consciousness of most poisoned, morbid symptom attention-diverted people not aware of meta plans for, ultimately, Anti-Life on Earth (2). There are TWO PLANS listed just above. The material one (1), and the meta-physical one (2). The latter funds the former, and the latter merges seamlessly and invisibly into the background of the former.

And the bio-awful just gets worse:

> Ron Fouchier from the Erasmus Medical Center in the Netherlands and Yoshihiro Kawaoka from the University of Wisconsin intentionally developed a militarized strain of H5N1 avian flu capable of easily transmitting among mammals...
>
> ...they essentially discovered a way to potentially spark a global flu pandemic with the potential to kill or seriously injure billions of people (Huff 2013).

3.3.3 META TREND: INDUSTRIAL TOTALITARIANISM

Pesticides, nuclear power technologies, growth hormones in intensive animal production, and Genetic Engineering to name just a few of the monsters we make. They all represent the core problem of science and industry taking to themselves the supreme authority to ignore Nature, to create new or heavily altered (GMO) lifeforms, to manipulate and invade ecological fabrics or human bodies (e.g. influencing/dictating chemicalized interferences such as leveraged or forced infant/child vaccinations, flouridation [see: http://dianabuckland.webs.com/] and psychotropic drugs), and to demand lots of money for products (medications) it says will cure the ills that arise out of technology's mass-medication of this Planet:

> Isn't GE and GMO 'technology' the new god of science that creates organisms, which do not appear in Nature, that are intended to become patented assets for vested interests... (Frompovich 2014).

Also:

> GMOs have been deployed to privatise knowledge and seeds through Intellectual Property Rights (IPRs), which include patents and copyrights. While on the one hand this is blocking public research on plant breeding, on the other it is denying farmers the right to save seeds and to share knowledge and continue the evolution of the seed. IPRs also deny the collective, cumulative innovation of indigenous cultures and promote biopiracy (Shiva 2014a).

And, in consideration of how fascist the new Biotech is becoming:

> ...will virus and biological genetic modification become similar to what happened early in the 20th century when physicians went hog-wild using children in orphanages and state-run-institutions in New York, Pennsylvania, and other states as human guinea pigs to further what had become the new sciences of "eugenics" and vaccinology? (Luther 2014)

Its seems that this scenario is all too possible given the following. Note the article titled: "Violence and Aggression against Human Rights in the Wake of Agribusiness" (July 12, 2005):

> The agribusiness sector concentrates land, water, and income. Its production is mainly for export, creating profits for a privileged elite at a very high socio-environmental cost. The irrigation of monoculture consumes 70% of the country's water. Its machines are substituted for manual labor in the countryside, in a country [Sth. America] whose greatest problem is unemployment. In the states where agribusiness has expanded, privately-sponsored violence is growing, along with repression through the power of the Judiciary (http://www.landaction.org/display.php?article=272; accessed: 18 Aug. 2008).

See: http://www.landaction.org/spip.php?rubrique35 for multiple examples of agri-business' military, police, national guard and mercenary fascism against (especially) indigenous protests over corporate land-grabs and pollution of native lands.

And:

The fourth violation of the freedom of knowledge and knowledge sovereignty is preventing the evolution of public knowledge about how life works, how we can produce more and better food ecologically through the control of scientific publications as well as the media to promote an obsolete paradigm of genetic reductionism and mechanistic science, and repeatedly making false claims to miracles through genetic engineering (Shiva 2014a).

OK, ignoring my meta-theories above for just a moment, big business might be totalitarian, but hasn't it always been this way?

The largest German daily newspaper S¸ddeutsche Zeitung has today published a shocking article that reveals how Monsanto, the US Military and the US government track both anti-GMO Campaigners and Independent Scientists who study the dangers of GMOs.

In a very detailed article the S¸ddeutsche Zeitung journalists reveal information on how the US Government "advances the interests of their corporations" using Monsanto as an example.

The article states: "It is noticeable that anyone who criticizes Monsanto has their life made very difficult or an invisible hand ends their careers. But who is this Anyone? Targets are scientists such as the Australian Judy Carman. She has made a name for herself with studies of genetically modified organismsÖ. Thus, several websites on which Carman published her studies are regularly the target of hacker attacks ñ Evaluations of IP protocols show that not only Monsanto regularly tracks the pages of these sites, but also various institutions of the U.S. government, including the military. These include the Navy Network Information Center, the Federal Aviation Administration and the United States Army Intelligence CenterÖ" (Sustainable Pulse 2013).

And:

"We have documented time and time again scientists who have been fired, stripped of responsibilities, denied funding, threatened, gagged and transferred as a result of

the pressure put on them by the biotech industry," he added (Quote attributed to
Jeffrey Smith, Institute for Responsible Technology; Graves 2011).

Further:

On January 4, 1993, 300,000 Ogoni (Nigerian) people gathered to peacefully protest Shell's environ-mental devastation of their homeland [the Ogoni live in a small area ñ 404 square miles ñ in the oil rich Niger Delta]. It was the largest demonstration ever against any oil company. Since that day when the Ogoni began their campaign of nonviolent resistance, over 2,000 of them, including Ken Saro-Wiwa, have died at the hands of a military that is armed by and paid for by Shell (http://www.remembersarowiwa.com/ 2008):

Shell and Chevron are in the spotlight this week, with shareholder meetings and a
historic trial.

On May 13, the Nigerian military launched an assault on villages in that nation's oil-
rich Niger Delta. Hundreds of civilians are feared killed by the Nigerian military.
According to Amnesty International, a celebration in the Delta village of Oporoza was
attacked. An eyewitness told AI: "I heard the sound of aircraft; I saw two military
helicopters, shooting at the houses, at the palace, shooting at us. We had to run for
safety into the forest. In the bush, I heard adults crying, so many mothers could not
find their children; everybody ran for their life."

Shell is facing a lawsuit in U.S. federal court, Wiwa v. Shell, based on Shell's
alleged collaboration with the Nigerian dictatorship in the 1990s in the violent
suppression of the grass-roots movement of the Ogoni people of the Niger Delta. Shell
exploits the oil riches there, causing displacement, pollution and deforestation. The
suit also alleges that Shell helped suppress the Movement for the Survival of the
Ogoni People and its charismatic leader, Ken Saro-Wiwa."

In 1998, I traveled to the Niger Delta with journalist Jeremy Scahill. A Chevron
executive there told us that Chevron flew troops from Nigeria's notorious mobile
police, the "kill 'n' go," in a Chevron company helicopter to an oil barge that had
been occupied by nonviolent protesters. Two protesters were killed, and many more

were arrested and tortured.

Oronto Douglas, one of Saro-Wiwa's lawyers, told us: "It is very clear that Chevron, just like Shell, uses the military to protect its oil activities. They drill and they kill" (Goodman 2009).

What does Monsanto DO? What are its characteristics, it's 'legacy'?

- GMOs
- rBGH or Bovine Growth Hormone (causes extreme distress in cows and is linked to numerous cancers in humans)
- Aspartame or NutraSweet, Equal (causes 94 health issues)
- Roundup (toxic)
- Petroleum-Based Fertilizer (destroys soil integrity)
- Atom bomb and nuclear weapons (Monsanto's Thomas and Hochwalt Laboratories contributed to plutonium purification and techniques to refine chemical triggers in atomic weapons)
- Polystyrene (5th worst generator of hazardous waste)
- Saccharin (carcinogenic)
- PCBs (Cancer: Monsanto knew about PCB dangers from 1956 on...)
- DDT (toxic)
- Dioxin (toxic)
- Agent Orange (hundreds of thousands of deaths and birth deformities, human health issues known by Monsanto when it sold Agent Orange to the US government for its war effort in Vietnam) (Fractured Paradigm 2013).

The above represent a consistent pattern of forethought, or a PLAN, not just a series of super-nasty business practices and decisions. The materialistic or physical PLAN is for domination and profit, forever, while the meta-physical PLAN (the one that backgrounds the first) is for total Earth destruction.

3.3.4 META TREND REFORMATION?

If non-stop liars and purveyors of planet-killing technologies like Monsanto and the like are giving the rest of industry a bad name, then why doesn't industry itself pull together and bring these fascist companies into line? Could an internationally leveraged credit and penalty system be fashioned around a Truth in Research and Precautionary concept? Truth is rewarded, while if a tipping scale (not balance) of peer review finds research truth callously flaunted by rigged results and blatant lies, then a $10 Billion fine is imposed for each infringement. Perhaps better still, a significant infringement (or catalogue of consistent transgression) could see the dismantling of the company, with the assets transferred to companies demonstrating ethical behavior.

If a company's IP address is established as the source of a hack, then severe penalities should be metered out by the international authority. Though, wouldn't this international organisation be

infiltrated and taken over? Is this too big of a job, too big of an ask. Am I suggesting, really, that the corrupt pretend to censor the corrupt because there is too much corruption? My PhD Thesis (see Endnote # 10) suggests very strongly that there are fatal flaws in the human mind, flaws that cannot be healed by human power. Nevertheless, this is no reason to allow the fully corrupt to do as they will. Perhaps TRYING to be good is THE preeminent reason for this unique, first taste of sentience?

3.3.5 CAN A BAD META TREND PRODUCE ANYTHING OTHER THAN BAD THINGS?

Let's go a little deeper. Do dirty business tactics really reflect on GMO technology itself? If GMO tech is so inherently or intrinsically wrong, then in what central or core way is it?

> "As geneticist Dr Mae Wan Ho said: "Instead of the linear, one-way information flow envisaged in the central dogma from DNA to RNA to protein and 'downstream' biological function, there is intricate cross-talk between the organism and its environment at all levels, with feed-forward and feed-back cycles in the epigenetic and metabolic networks of molecular interactions that mark and change genes as the organism goes about its business of livingÖ The organism is doing its own natural genetic modification with great finesse, a molecular dance of life that's necessary for survival. Unfortunately, genetic engineers do not know the steps or the rhythm and music of the dance" (Quote attributed to Dr. Mae-Wan Ho; Shiva 2014b; original source: Ho 2013)

Despite the above, isn't GMO technology just simply somehow "better" in some way?

> US farmers and scientists are growing increasingly concerned about glyphosate's detrimental effect on soil quality.
>
> Monsanto is recommending additional soil inputs to counter the mineral deficiencies in plants caused by glyphosate – an example of the unsustainable nature of GM technology.
>
> It's worth bearing in mind... that the yield increases attributed by one commentator to GM are in fact the result of conventional breeding improvements. The GM traits are put into the best germplasm, and the best germplasm is a product of conventional

breeding.

A recent study showed that the mostly non-GM farming practiced in the EU was more productive in terms of yield improvements than the GM farming practiced in the US (GMWatch 2013).

Lower yields not a problem for you on your farm? Look at your children, and then read this:

After feeding hamsters for two years over three generations, those on the GM diet, and especially the group on the maximum GM soy diet, showed devastating results. By the third generation, most GM soy-fed hamsters lost the ability to have babies. They also suffered slower growth, and a high mortality rate among the pups.

And if this isn't shocking enough, some in the third generation even had hair growing inside their mouthsóa phenomenon rarely seen, but apparently more prevalent among hamsters eating GM soy (Smith 2013).

Also:

The Argentine government helped pull the country out of a recession in the 1990s in part by promoting genetically modified soy. Though it was something of a miracle for poor farmers, several years after the first big harvests residents near where the soy cop grew began reporting health problems, including high rates of birth defects and cancers, as well as the losses of crops and livestock as the herbicide spray drifted across the countryside (Graves 2011).

3.3.6 THE DEATH PLAN SPREADS... DEATH!

The following headings are taken from my below-listed WordPress Essay:

Direct Links Between Pesticide And Disease.
Traveller/Backpacker Pesticide Deaths In South-East Asia.
Pesticide Deaths (Human And Animal) Worldwide.
Pesticide Deaths And Non-English Speaking Pesticide Use In Australia.
Global Disease Patterns on the Tail of Massive Pesticide Use.

See: http://wp.me/p2msN0-L for my Essay titled: "DOMESTIC OR

COMMERCIAL PESTICIDE USE: COULD YOU KILL OR BE KILLED?"

3.3.7 A BRIEF CURE

What type of farming should we ultimately strive for?

> ...a new UNCTAD report which states that farming in rich and poor nations alike should shift from monoculture towards greater varieties of crops, reduced use of fertilizers and other inputs, greater support for small-scale farmers, and more locally focused production and consumption of food. More than 60 international experts contributed to the report, launched last week (LRAN 2013).

3.4 A NEEDED SAVING FAST CHANGE EVENT (THE MEANING OF EVIL)

Such are the commercial dynamics in this frantically greedy transnational biotech-infused globalist world that the Precautionary Principle does not even get a "look in" when no realistic restrictions on pesticide use are set. This almost total lack of accountability represents no less than the dumbest, most embarrassing and most avoidable Extinction Level Event in the history of Planet Earth! And yet to now try to close the stable door after the toxicological horse has already bolted and galloped past Mars appears to be politically and industrially impossible. Yet, THAT is precisely what is demanded: A SAVING WORLDWIDE TOXICOLOGICAL REVOLUTION, on the back of a profound change in our science, on the back of a profound change in human attitudes.

The generationally consistent, seemingly immortal industrial arguments supporting "progress" or global chemical trespass at any cost are violent, and yet intrinsically weak and unexamined. Supreme corruption and power gluttony here sees industrial and legal/judicial elite power, presumption and wages/rewards contrasting starkly against the usual status of the disenfranchised chemically-raped cannon-fodder poisoning victim: no legal leverage inside a system favoring the might of government and industry.

Industrial, we-own-the-world-and-can-damn-well-do-whatever-we-like (judicial-type) arguments appear to originate via a repeating, pestilent mentality that is anything but weak. Human corporate thought manifests in history as a 'guided' quantity, coached through increasing orders of pestilent rationality and organised destructiveness over time as if motivated by some kind of intrinsic background metaphysical dynamic that drives our worst attitudes and notions of invention.

These attitudes are found to be so demonically venomous that they

relentlessly superinduce us to repeat error and seek greater, more perverse, intrigues. Therefore, we are always poisoned and brutalized, pushed ahead of a goose-stepping global bad science menace, without any respite from this Toxic Long March. This annihilatory immortal evil now imposes on us a human nature funded pesticide/fertiliser/hormone/additive/GMO/medication oblivion so pervasive and so woven and locked into our every concept and function of modernity that it appears only the imposition of a likewise immortal REVOLUTIONARY will from outside our dark human thoughts could possibly save us. Philosophers and the religious often appeal to this kind of saving grace.

Neither human rights or the industry "owned" EPA/USDA/FDA/AMA/APVMA etc. variants have any worthwhile influence inside the new fascism of the global political bowl of biotech spiders that DESPERATELY wishes to fabricate its horrible version of a brave new depopulated and 'cleansed' world where industry controls all information, commerce and law (see Endnote #7). It seems we have to learn passionately difficult lessons on this Kindergarten Earth via the terrible crucible of industry/political bias, subversive advertising/propaganda and mass poisoning in this 21st century era after the earlier, more in-your-face, 20th century Nazi version of pure evil sought to OWN THE WORLD through invasion and slaughter.

"Owning", now, at this time in history and especially in terms of gross genetic interference (the making of GMO DNA monsters), translates to potentially 2 billion deaths in the next series of worldwide pandemics, soon to appear. Note: "Most of the infectious human diseases today in fact emerged from animals at some point in time; and they now account for over one million deaths and more than one billion illnesses annually" (Karesh 2013). (Also see: http://www.twnside.org.sg/title/healt-cn.htm and http://www.news-medical.net/health/Future-Pandemics.aspx).

Also:

> At a 25% mortality rate the H7N9 avlian flu, combined with modern transportation systems and metropolitan areas housing tens of millions of people, there is serious potential for a globally significant catastrophe.
>
> Should this virus increase its transmission rate we could be looking at a scenario where a billion or more people contract the virus around the world.
>
> The math is straight forward. One in four will perish.
>
> While weíve had pandemic scares in the recent past, this one really has researchers and global health officials spooked (Slavo 2014).

Could it get any worse? What about an 'enhancement' of the current

global HIV pandemic storm?

> New evidence raises the possibility that the CaMV 35S promoter in practically all transgenic crops grown commercially may enhance multiplication of disease-associated viruses including HIV through induction of proteins required for their transcription (Ho & Cummins 2009:172).

4.0 GOOD CONNECTIONS USED BADLY BY PESTICIDE TECHNOLOGIES

Everything is connected. There is no separation of parts. Everything together acts like a plan because intentionality is found in all design. What occurs in one area resonates throughout and affects everything else. What you do in terms of destructive technology "here" affects "there". Nothing escapes the attention of toxic invention... Now that might resonate as an old hippy-ish kind of sentiment, however the new physics shows this to be absolutely true.

Ultimately, pesticide/herbicide use:

1. Is destructive to broad ecological frameworks (the negative effects fan outward). Glyphosate is toxic to fish, aquatic organisms and beneficial insect species (Leu, 2007; van der Werf, 1996) (***Interestingly, a test for the presence of Glyphosate in water and urine is now available. See Endnote #3.***) or, multiple layers of the Web of Life;

2. Destroys our critical soil resource (and most valuable material heritage) by wrecking soil composition (glyphosate is toxic to earthworms, mycorrhizal fungi, nitrogen-fixing bacteria, micro-organisms, and arthropods [ibid.]) and ALL life that depends on soil (which is... EVERYTHING);

3. Generates botulism and other pathogenesis potentials (see: http://www.ncbi.nlm.nih.gov/pubmed/23396248; http://www.gmfreecymru.org/pivotal_papers/crucial38.html; and http://www.netwerkvlv.nl/downloads/2012-Krueger,%20M-glyphosate%20effects.pdf) which spread from soil to plant to animal to human;

4. Creates an ever-enlarging population of those with Multiple Chemical Sensitivity (Idiopathic Environmental Intolerance). Note: "Most tragically, suffering, illness and disease surround us today in a way we would not have imagined a half century ago. We have banished some diseases only to have them replaced by a grumbling yet profound toxicity which is stripping our children of their rightful future" (Donohoe, 1998:38).

5. Provides the chemical trespass injury fodder for destructive and stressful adversarial confrontations in toxic (and often heavily corrupted) legal settings (see: http://poisoningandlegalaction.com.au/essays/essay3-diminishing-returns-of-complexity.pdf);

6. Creates monstrous disease scenarios via increased use through herbicide tolerant GMOs:

> Lappe and Bailey (8) reported that glyphosate fed to animals at high levels was shown
> to cause liver toxicity. In a case control study in Sweden published in the journal
> Cancer, Hardel and Eriksson (9) found that exposure to glyphosate revealed increased
> risks for non-Hodgkin's lymphoma. The introduction of glyphosate tolerance to crops
> has expanded the use of this herbicide. These preliminary studies on glyphosate could
> be a forewarning that unsuspected hazards may accompany glyphosate resistant crops
> (Krimsky 2002:244).

7. Sets up impossible meta-poisoning (even pandemic) scenarios that will be more than an "Inconvenient Truth" to everyone concerned (see: http://poisoningandlegalaction.com.au/essays/essay1-worldwide-disease-pandemics.pdf).

Toxic, exotic, synthetic chemicals will give us techno marvels while killing our children and grandchildren. A bad deal all round.

5.0 OVERALL ECOLOGICAL INVASION & REPLACEMENT DYNAMICS: PLANTATION CONSTRUCTION, PESTICIDE CONTAMINATION, PATHOGEN RELEASE, OPERATIONAL ACCIDENTS & COMMERCE/POLITICS

5.1 NATURE INVASION, GENETIC 'ENHANCEMENT', PATHOGEN/TOXIN RELEASE & EXPOSURE, & ACCIDENTS

We are stampeding multiple attacks on the ecological integrity of our world. The rush for dumb profit is searingly obvious. The intellectual demand that all stand aside in favor of very bad science is completely fascist.

5.1.1 NATURE INVASION

In terms of the invasion of habitats, it's not just our pesticide chemicals going on ahead of us on the wind, spreading into pristine habitats and upsetting eco-dynamics. This includes our pollution wastes funding pathogenic alterations: developing REMOTE DRUG/ PESTICIDE RESISTANCE waiting for a physical release, waiting for the

bulldozers to come in. There's that GREAT INSULT: it's US physically entering or invading environments anf then destroying those environments, thus becoming subject to CLOSETED PATHOGENS that introduce new diseases to the human race: "...this might be because we disrupt habitats and come into contact with animals we haven't been in contact with before" (Smith quote: Jha 2013). The appearance of AIDS and other emerging diseases (as 'releases' from a damaged biosphere [Preston 1994:29-30]) and global warming as a function of our greedy and inappropriate world-girdling interference, clearly describes the longer term outcomes of the imposition of perverse global economic theory.

Lyme, as a further specific example, seems to arise, like many environmental imbalances, out of disturbed and chemically affected environments. That is, Lyme demonstrates well "a developing model of infectious disease that shows that most epidemics ó AIDS, Ebola, West Nile, SARS, Lyme disease and hundreds more that have occurred over the last several decades ó don't just happen. They are the result of things people do to nature" (Robbins 2012) in their typical fracturing of the Web of Life where diseases escape from nature and turn into pandemics (ibid.). Also: "We like to think we discover viruses, but it's also the viruses discovering us" (Woolhouse quote: Jha 2013).

Particularly, the above theme appears to have coherence in terms of plantations, at the very least in terms of the toxic overload of the invaded environment, and at most in terms of gross environmental instability leading to potential pathogen release into human populations:

> The hellish landscape that results from clearfelling - akin to a Great War battlefield - is generally turned into large monocultural plantations of either radiata pine or Eucalyptus nitens, sustained by such a heavy program of fertilisers and pesticides that water sources for some local communities have been contaminated by ATRAZINE, A CONTROVERSIAL herbicide linked with cancer and banned in much of Europe. Blue-dyed carrots soaked in 1080 poison are laid on private plantations to kill native grazing animals that pose a threat to tree seedlings. The slaughter that results sees not only possums, wallabies and kangaroos die slowly, in agony, but other species - including wombats, bettongs and potoroos - killed in large numbers, despite being officially protected species (Flanagan 2007).

And, please slowly absorb this quite spectacular assessment:

> We started to see a range of really unique, interesting diseases that were afflicting

platypus and wallabies and wombats. And later on, of course, now we're seeing this horrendous infectious, transmissible cancer in Tasmanian devils...

...is it something that we, as human beings, may have done to subtly modify the environment to allow for this relationship to change. Because what disease in wildlife populations tends to be is a harbinger of instability, of a breakdown in normal cycles of a population reaching a stable balance with other animals interacting with their ecology. And perturbations, whether they are human induced, or the fact that we've actually through our agency allowed for the introduction of new pathogens. This is the brave new world that we face in the 21st century.

We use poisons to suppress the wildlife that we think are nuisances. We start to use chemicals to support the growth of our particular commodities...

We have a sort of a blind faith that the regulatory processes are going to protect us. And yet, at a sub jurisdictional level Tasmania [Australia] is giving us a lens into a brave new world that is going to be potentially more ridden with cancer and disabling diseases that are going to be linked to in, you know, minute quantities of chemicals that are changing, genetic triggering events within our bodies. Epigenetic factors, hormone disrupting factors...

Surprisingly, you know, and perhaps not surprisingly, we're finding that [Tasmanian] devils have got residues of significant synthetic, organic pollutants that are from the products that we as a human species contaminated into their environment. And they are, because of their role as a top order carnivore, they're bio-accumulating those chemicals. We're talking about dioxins, PCBs, fire retardant chemicals, the PBEDs, the organo chlorines. Now, some of these chemicals are linked to a range of maladies, including carcinogenesis and the potential to impact on cell development and expression of hormones and what have you. So, what we've got to really think about is this background impact of these chemicals having an

instigator effect on the
expression of the index cases of this cancer? And is it changing the immune system of
these devils as well. And these are factors that I think really make the devil almost
a shocking animal to be like the canary down the mineshaft, the coal mine.

You've got to ask yourself the question, why, why all of a sudden do we have all this
pathogen stress on wildlife?... ...in the last thirty years we're seeing a range of
new diseases coming into our wildlife populations. And it's impacting on their
survival. And with the continuations of the habitat fragmentation and habitat
destruction that I was telling you about earlier, this is causing these animals to be
under more stress. So the diseases are transmitting more easily in some cases.
Stress factors, exposure to chemicals, exposure to other things within the environment
may be tipping the balance towards disease expression...

And it's usually the voiceless, the wildlife, that are your earliest indicators that
something is going wrong. There's something rotten in the state of Tasmania. When
wildlife start to develop a range of maladies, it's saying something is unstable in
the ecology. It's not just that the chemicals are the trigger of that, it's saying
there are multiplicity of factors building here which need to [be] explored and that's
where the Marcus Scammell [see below] example of putting all the cards on the table is
really relevant. We must have a dialogue which is asking the critical questions.

...if we continue to do what we're doing to it, we will destroy it and we will destroy
the wildlife, the biodiversity and we'll probably destroy public health as well
(Obendorf 2010).

And:

Dr Bleaney, Marine Ecologist Marcus Scammell and local oyster farmers paid for testing
of the George River after concerns arose about human and oyster health.

Dr Bleaney says the tests show the river contains a toxin that comes from a type of

plantation tree that's been introduced to the State, Eucalyptus nitens.

Environmental toxicologist Christian Khalil tested the water on human cells and told Australian Story whatever was in it was toxic to skin, liver and lung cells (ABC News 2010).

Further:

When you see large numbers of dead animals occurring all of a sudden, it is screamingly obvious that you have something wrong. That is not a natural event. Animals donít lie. Ninety per cent of those oysters dropped dead after one rainfall event. They donít lie. The Tasmanian devils arenít lying when theyíre sitting up and saying weíre sick. They really are sick. In Alisonís population of humans thereís a variety, a much bigger variety of illness than you would normally observe, that you would normally expect. And itís not that thereís one particular type of cancer thatís sky rocketed; itís that sheís got so many unusual cancers. They all started to emerge in that north-east corner at about the same time. And it was around about that time that the plantation industry was really starting to take off (Scammell 2010).

As a preface:

Endotoxins are the cell-wall components of gram-negative bacteria, and these compounds are released after the death of the bacteria (Banhazi, et. al. 2008:28).

In addition:

In March 2010 Bleaney and Scammell released the research findings of their research on the identification of a previously unknown group of toxins in freshwater in the George River catchment... The presence of a range of pesticides registered for use in commercial agriculture and forestry were intermittently detected, the commonest being alpha-cypermethrin, atrazine, simazine, glyphosate, the phenoxy herbicides - 2,4-D, MCPA and metsulfuron-methyl. From water testing came the discovery of several unknown chemicals in the water samples. The presence of these

chemicals in water samples made
it hazardous to marine and freshwater organisms and to human cell lines. The
structure and pharmaco-toxicity of these chemicals is still the subject of research.

The laboratories participating in research and analysis of untreated water from the
George River (the drinking water catchment for St Helens, NE Tasmania) concluded that
there are toxins in the George River that will kill aquatic organisms and human
cells. The laboratories have further determined that the toxins appear to originate
from a non-native eucalypt (Eucalyptus nitens) grown in plantation monocultures.

Tree seedling breeding programmes advertise that clonal propagation technologies are
used. Also, the current literature on commercial tree biotechnology regularly
includes terms such as 'selective breeding', 'elite trees', 'enhance pest and
environmental tolerance of plantation trees', 'genetic enhancement', 'supply and
propagate superior germplasm', 'determine the genes controlling critical wood quality
factors', and include references to areas such as 'gene association', 'gene tagging'
and 'gene knockouts ñ RNAi' technologies... In the 1990s the Bacillus thuringiensis
(Bt) endotoxin gene was incorporated into E. globulus and E. nitens and a synergistic
effect of the Bt protein and the volatile oil, cineole was shown to exist...
Expressed Bt endotoxin was damaging to the midgut allowing cineole to enter the insect
haemolymph and exert a toxic effect at lower concentrations than occurred when Bt
endotoxin was not present (SourceWatch.org 2013a).

5.1.2 GMO ATTACK

If you want to feel much safer, then read the other side of the coin, see: http://www.onlineopinion.com.au/view.asp?article=10658. And, although page 2 of this report (see: http://www.onlineopinion.com.au/view.asp?article=10658&page=2) notes the theme "plantations being toxic" (essentially in terms of being used as a negative slogan by environmentalists), one should not just assume that a plantation can be toxic just through the pesticides it may use. What about transgene escape?

There are several important biosafety concerns regarding the

release of Bt rice. One of the major environmental concerns regarding the release of transgenic crops is the potential escape of transgenes into wild rice populations (Snow 2002, Ellstrand 2003). Wild relatives host a large assemblage of arthropods, many of which are not pests. Therefore, transgene escape into wild plant populations could affect arthropod biodiversity, abundance, food web structure, and food web stability in natural ecosystems. Transgene flow could occur if Bt rice were released for commercial growth in the countries where wild rice and its relatives co-exist with cultivated rice crops. (Cuong, et. al. 2010:1).

Also:

Invasive escape of the transgene can occur at three levels. First, the transformed species itself can escape cultivation and become a weed. That concern is rooted in the experience with exotic tree species in plantation forestry. In the southern hemisphere, for example, at least 19 species of pines have escaped cultivation and invaded other habitats during the past 3–4 decades, at great economic and ecological costs (Richardson 1998). Second, the transgene can be transferred to nontransgenic individuals of the same species through pollination. Recent examples of sexual gene transfer from transgenic to nontransgenic crops (Reiger et al. 2003) or wild-type species (Quist & Chapela 2001) underscore that concern. Third, the transgene can be transferred to a wild relative through out-breeding (van Frankenhuyzen and Beardmore 2004:1170–1171).

On the third point above, please note:

...transgene escape can easily occur via gene flow and may result in potential ecological and biodiversity consequences if significant quantities of transgenes constantly outflow to non-GM crops and weedy /wild relative species (Lu 2008:72).

Further:

Another example involves the escape of transgenes from glyphosate-resistant (a

herbicide) bentgrass (Agrostis stolonifera) in the United States. Reichman et al. (2006) detected transgenic hybrids with weedy Agrostis species some 3.8 km downwind of transgenic field trials, in federally-protected grassland. The ecological consequences of such outcrossings are uncertain, yet any decrease in genetic diversity would lead to a change in community structure with the introgressed regions. As a result, in 2007 a federal judge ordered a temporary halt in new approvals of GM field trials, citing an inadequate environmental review of the potential environmental impacts (Quist 2010:12-13).

Further still:

Two incidents of transgenic contamination of wild relatives have been studied in some detail - the transmission of an herbicide-tolerance gene from oilseed rape (canola) to weedy wild turnip hybrids in Canada; and the detection of herbicide-tolerant grasses up to 21 kilometers from a test site in the US state of Oregon...

The incidents of contamination listed in the side box show that gene escape and GE contamination cannot be prevented once GE crops are released. This in turn suggests that the widespread planting of GE trees would over time lead to a persistent contamination of the worldís native forests, with disruptive ecological consequences".

With current rates of deforestation contributing 20% of global carbon emissions annually, the massive increase in deforestation that will accompany the rise of wood-based agrofuels production will have significant impacts on climate, belying the argument that cellulosic agrofuels will be part of the solution to global warming.

In conclusion, the massive increase in logging and the planned use of genetically engineered trees that will accompany the production of wood-based "second generation"agrofuels make this so-called "alternative energy"one of the foremost threats to forests and forest-dependent peoples across the globe (www.globaljusticeecology.org 2008:3,10).

As an aside, given that "Global warming is at large the result of deforestation, desertification and incessant environmental pollution" (Eshetu, et. al. 2005), the removal of natural forests and the consequent poisoning of whole landscapes by pesticide should be largely prohibited.

And:

> ...Strauss et al. (1995) stated unambiguously, "Gene flow within and among tree populations is usually extensive, which makes the probability of transgene escape from plantations high." Timmons et al. (1995, 1996) expressed a similar conclusion for Brassica. Likewise, the ecologists Kareiva et al. (1994) concluded that "the escape of transgenic pollen is inevitable." Williamson's (1994) analysis of historical records of deliberately introduced organisms, concludes that nearly all escape, and of these 10 percent become established (Raffa, et. al. 1997:251).

If the above is bad, then this is much worse because numerous experts:

> ...have identified possible adverse effects of escaped transgenes. Some examples include creation of new (or enhanced) pests, harm to nontarget species, and disruptions to biotic communities, natural food webs, and ecosystem processes.
>
> In each of these cases, there are well established mechanisms by which such adverse consequences might arise, and substantial literature providing precedents from analogous introductions. Examples of possible mechanisms include: 1) enhanced competitiveness of a genetically engineered organism (due to pest resistance or physiological environmental tolerance of stress) that displaces existing or subsequent beneficial organisms (Ellis et al. 1984; Moamad et al. 1984); 2) reductions in seed dispersal, pollination, or biodiversity by insecticidal transgene products (Simmonds 1976; McGranahan et al.∑1988); or 3) acquisition of traits that enhance competitive status by existing weed species (Windle and Franz 1979) (ibid.:251-252).

Now, let us contrast GMO transgene escapes to pesticide:

> A single molecule of DDT [1,1,1,-trichloro-2,2-bis(p-chlorophenyl)ethane] remains a single molecule or degrades, but a single crop allele has the opportunity to multiply itself repeatedly through reproduction, which can frustrate attempts at containment (Ellstrand 2001:1543).

Given the toxicity of GMO products, GMO stands as an absolute hyper-infectious PLANET KILLER, just a slower and off-greener version of a nuclear holocaust, and with the added interest of likely massive ecological instability and famine preceding the end of the nightmare.

And what about in situ and introduced GMO pathogens?

5.1.3 EXTENDED GMO SPECIFICS: ENDOTOXIN & OTHER ATTACKS

5.1.3.1 ENDOTOXIN, PARTICULATE/POLLEN, GASEOUS & FUNGAL BIOAEROSOLS

'Enhancing' pest tolerance? What ELSE could a released endotoxin gene 'enhance'? Note that: "Researchers have determined that microbial contamination, in the form of bacterial endotoxins... [see Endnote #8] and B-1,3-glucan... [see Endnote #9] are linked with SBS [Sick Building Syndrome] in living quarters and office buildings (Wan & Li 1999b: 172)" (Thompson 2000:9).

Also:

> Other factors may contribute to the symptoms associated with poor indoor air quality, including the presence of organic compounds causing sensory irritation or an unpleasant odour,7 and airborne bacteria and their products including endotoxins.8 (Royal Commission On Environmental Pollution 2007:197)

BACTERIAL ENDOTOXINS essentially equal MICROBIAL CONTAMINATION, which can equate with BIOAEROSOL TOXINS (which, overall, include also mold mycotoxins) causing respiratory problems, nausea (Thompson 2000:9, referencing Koskinen et al. 1999:143-144 [see Endnote #10]) and non-respiratory issues such as "aches and pains, nerves, headache and eye irritation" (ibid. [see Endnote #11]).

The fact of the SBS in humans means that, not only do symptoms manifest as a response to toxic chemical vapor (Volatile Organic Compounds, or "VOCs") exposures from synthetic materials (such as synthetic carpet, particle board, glues, paint, etc.) in the home or office, but that -- in terms of the external sourcing of an additional chemical culprit -- endotoxin may have migrated into buildings. That is, the endotoxin is AIRBORNE. This is a serious matter in terms of GMO plantations:

> Exposure to bioaerosols may occur in many different occupations, especially those in which stored products are handled or where aerosols are created as a result of leaks from equipment intentionally or accidentally contaminated with microorganisms or during particular operations as, for instance, in laboratories and during post-mortem or surgical procedures (Lacey & Dutkiewicz 1994).

The analogue of the above occupational exposures in an open/external environment could be:

- Storms and high winds (including trees blown down or branches snapped off)
- Harvesting operations
- Post harvesting cleanup
- Pollination
- Even 'passive' (nothing in particular overtly happening other than GMO plant growth and normal total plant immersion in, and responsiveness to, the local and extended environment).

In regard to the last point, please note:

> Members of the Myrtaceae family and most of the worldís plants exchange gases and moisture through stomatal openings which may open and close in response to climatic

> ...stomatal opening also influences the emissions of a range of terpenes...

> ...The authors demonstrated that volatile emission changes as a function of stomatal opening or closure. T hey showed that more soluble compounds such as alcohols and carboxylic acids are controlled by stomata. Specifically, they showed that large morning bursts of aldehydes were related to stomatal opening after closure during the night (Gibbs 2006:86).

Many other gas emissions are shown by this author to occur in plants, including alcohols, carboxylix acids, linalool, 1, 8-cineole, monoterpene, ocimene (especially in Pinus pinea), acetic acid, terpenes (including Sesquiterpenes from Eucalyptus viminalis), and eucalyptol, (ibid.:86-90).

Note further:

> Rogge et al. analysed fine particles from plants in a simulation representing natural leaf abrasion by wind... Fine particles less than two

microns shed from the leaves
were extracted and analysed by GC/MS...

Particulates from plants can act as vectors for terpenes. Logically, when fungi grow
on substrates containing terpenes, there would be some uptake of terpenes and
distribution into fungal spores, contributing to the set microscopic particles found
in the air. (ibid.:91).

And what of fungi growing on GMO pollen and the other substrates on and emanating en masse as airborne particulates from GMO plantation crops? Given that fungi can feed off dead matter and also act parasitically (ibid.:92), WHY SHOULDN'T FUNGI TAKE ON GMO CONTAMINATION?

Note GMO Accident #1:

There is now another fungus, among usÖthis one being an escapee from a genetic
engineering laboratory at Lincoln University in New Zealand. The refugee fungus,
named Beauveria bassiana, occurs naturally in soils throughout the world and has been
employed by mankind as a biological insecticide to control a variety of pests. In a
classic case of mistaken identity, scientists confused the GMO fungus with its wild
strain already present in the environment. As a result, despite constant reassurances
given the public that potentially dangerous organisms are contained securely within
research labs, this experiment was not conducted within the required and approved
genetic modification containment facilities. The buildings suspected of the leak have
been shut down until the severity and extent of the situation are fully understood.
Donít hold your breath, though; almost two weeks after the incident, investigators are
still at a loss as to how it occurred. To top that off, both the university and
research agency involved had been previously implicated or found responsible for other
GE experiment breaches. So much for safeguards and assurances. Tragically, self-
propagating genetic pollution is permanent. It cannot be recalled from the environment
(Allen 2013).

Note further GMO Accident #2:

1.Horizontal gene transfer at plant-surface sites

Comment by Ignacio Chapela, Berkeley/Troms√∏

The careful and understated presentation, beginning with the title, belies research results that I think should be considered a major landmark in the growing evidence demonstrating how little we know about the ecological consequences of transgenesis, in particular the potential for horizontal gene transfer in real field situations. It also shows a definite and probably very important source of concern, the real possibility that DNA vectored into plants could move out, with full reproductive capacity, via a microbial route into the genomic environment far and beyond the immediate space and phylogeny of the host plant. Any environmental evaluation of field releases should now be required to seriously consider this possibility.

The research for this paper is carefully conceived and conducted, using various sources of confirmatory evidence. The frequency of "spontaneous" transformations out of the bacterium and into the fungus (2 out of 17, 1 out of 15, 10 out of 31 and 14 out of 42 trials in various repetitions) is exceedingly high. Although the paper demonstrates the transfer "only" from whole bacterial cells onto fungal spores (or hyphae), a precautionary approach should dictate that the possibility be also considered that transfers could occur through back-transformation, since much of the Agrobacterium wherewithal necessary to accomplish it is present in the transgenic plant. It is also known that whole Agrobacterium can "hide" through the process of regeneration of plants out of callus in the transgenesis process, providing accessible cells for the transformation, and of course encounters of Agrobacterium and different fungi (and other organisms?) at a plant-wound site must be considered common in the field (Chapela, No date).

The above, CRITICALLY IMPORTANT, Chapela article also notes: "For the full text of this important new paper: http://dx.plos.org/10.1371/journal.pone.0013684 University of Bristol press release: http://bit.ly/bezdRp" (ibid.).

Note further GMO Accident #3:

2.Bacteria spread genes to fungi on plants
Tom Marshall
Planet Earth, 27 October 2010
http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0013684

A bacterium that's used to modify plants' genes can also change the DNA of completely different lifeforms in the wild, new research shows.

If the bacteria come into contact with particular fungi at a wound in a plant's outer skin, the fungi can come away with new genes from the bacterium. If these help it survive, they could become a permanent part of its genetic makeup.

This is a way genes could potentially escape genetically-modified organisms (GMOs) and move into other living things. It underscores the need to make sure these microbes are removed completely from genetically-modified plants before they leave the lab. It also shows that genes can move between organisms in more ways than has previously been assumed.

'This study suggests that the encounter between this bacterium and a fungus on the plant surface may lead to gene flow in a previously overlooked way, potentially leaking GM genes into the natural world,' says Professor Gary Foster of the University of Bristol, one of the study's authors.(Marshall 2010).

And here is an EXTREMELY interesting comment:

And if you hear anyone say the genes won't spread unless they occasionally confer an advantage, meaning natural selection will take care of the problem so who cares, here is why that is wrong: The genes can be thought of as a virus and the life form merely a host. All they have to do is survive long enough to spread into a new plant.

That whole patch of host plants can die for all this independent pseudo-organism (the string of GMO genes) cares- it is still surviving. GMO genes are going to transcend what we thought of as fitness- they are a fundamentally new kind of life (http://www.gmofreeportland.com/ 2010).

If all environments integrate and are essentially seamless enabling continuous communication, why would we ever conclude that there is an impassable barrier that prevents endotoxin or GMO-infused particulates from exiting a GMO plantation tree and becoming airborne (a bit like the myths that demand that Bifenthrin -- a synthetic pyrethroid termiticide -- and also glyphosate stay put once applied (see: http://www.docshut.com/ksuutp/bifenthrin-toxicity-mobility.html; http://poisoningandlegalaction.com.au/reports/MurrayThompson_The-Mobility-Persistence-&-Toxicity-of-Bifenthrin.pdf; http://www.slashdocs.com/mtwrrp/bifenthrin-toxicity-mobility.html; or http://poisoningandlegalaction.com.au/pesticides/MurrayThompson_The-Mobility-Persistence-&-Toxicity-of-Bifenthrin.pdf)?

Continuing with endotoxin. First:

> Elevated levels of endotoxin have been measured in agriculture (6), the biotechnology industry (25), office buildings (37), and swimming pools (21) (Walters, et. al. 1993:996).

How widespread are industry exposures?

> Exposures to bioaerosols in the occupational environment are associated with a wide range of health effects, including infectious diseases, toxic effects, allergies, and cancer [Douwes er aJ.,2003]. 'Workers from a large number of industries are potentially at risk including workers in agriculture, meat production, food and animal feed industry waste recycling and composting industry detergent industry wood and paper industry metal machining industries, biotechnology industries, the medical and public health sector, as well as, veterinarians, pet shop keepers, laboratory animal workers, etc.
>
> Another example is exposure to high levels of microorganims and endotoxin such as occur in waste recycling workers (e.g. waste sorting, organic waste collection and composting; [van Tongeren et al., 1997; Douwes et ai., 2000; Wouters et aI., 2002]) causing airway inflammation and respiratory conditions such as "organic dust toxic syndrome", asthma, and "extrinsic allergic alveolitis" [Poulsen et aI., 1995; Thorn and Rylander, 1998; Douwes et aI., 2000; Wouters et aI., 2002] (Douwes, Thorne &

Heederik 2003:39).

Why should we really worry?

> There is increasing evidence that diseases caused by organic dusts are mainly of an inflammatory nature. Among the many agents present in organic dusts, bacterial endotoxin is a major candidate for the inflammatory reaction" (Thorn 2001).

> ...it is now appropriately recognized that exposures to biological agents in both the occupational and residential indoor environment are associated with a wide range of adverse health effects with major public health impact, including contagious infectious diseases, acute toxic effects, allergies and cancer (Douwes, Thorne, Pearce & Heederik 2003:187–188).

Given that:

> Insertion of a gene taken from the fast-growing Arabidopsis weed, has created GM-Eucalyptus trees growing 5 metres a year, with 20%–30% more mass than their un-modified counterparts", and that "They are 27 metres high in 5.5 years [87] (SourceWatch.org 2013b)...

...I strongly suspect that enhanced growth in a GMO plant will make that plant's endotoxins and other GMO particulates more available for escape to the surrounding environment. How so?

First, and more generally, again, everything is CONNECTED:

> Headwater streams are intimately connected with the adjacent terrestrial environments. By-products from commercial crop fields have been shown to enter the draining water catchments throughout the agricultural mid-western U.S....

> Crop plant residues from Bt corn are known to contain this toxin[96][97] ["bacteria-derived o-endotoxin Cry1Ab, derived from Bacillus thuringiensis"] and recent research has shown some adverse effects of Bt corn by-products on stream organisms.[98]...

> ...the presence of the toxin in plant residues is potentially significant to macroinvertebrate consumers inhabiting these aquatic systems

(SourceWatch.org 2013c).

Further, in terms of ecological attacks, it is known that:

> A variety of studies have shown that B.t. applications can disturb insect communities.
> Research following large-scale B.t. applications to kill gypsy moth larvae in Lane
> County, Oregon, found that the number of oak-feeding caterpillar species was reduced
> for three years following spraying, and the number of caterpillars was reduced for two
> years.68 Similar results were found in a study of caterpillars feeding on tobacco
> brush following a B.t.k. application to control spruce budworm in Oregon.69 In
> untreated areas, the number of species was above 30 percent higher, and the number of
> caterpillars 5 times greater, than in B.t.k.-treated areas two weeks after treatment.
> The number of caterpillars was sill reduced in treated areas the following summer. In
> Washington, B.t. applications in King and Pierce counties to kill gypsy moths reduced
> spring moth populations by almost 90 percent.70 In addition, one rare species appeared
> to have been eradicated from the treatment zone, and moth populations were "heavily
> impacted in an area more than double that which was actually sprayed" as moths moved
> into the treatment zone from surrounding areas.70 In West Virginia, applications of
> Foray 48B reduced the number of caterpillar species and the number of caterpillars.
> The year following application, the number of moth species and the number of moths
> were both reduced. A recent (1994) study in four different Oregon plane communities
> found that total weight of caterpillars was reduced between 90 and 95 percent by B.t.
> treatment; the number of caterpillars was reduced by 80 percent; and the number of
> caterpillar species was reduced by over 60 percent.72 (Swadener 1994).

Also, aquatic insects, birds and shrews were found to be impacted by the toxin (ibid.).

Second, and a little more specifically in terms of a RISK ASSESSMENT FOR SHREDDING GREEN WASTE AT MOUNTS PLANTATION, EAST ALLINGTON:

> Pathway... Air transport then inhalation... Agitation of composting material causes
> the release of airborne microorganisms and dust. Continuous

exposure to bioaerosols
can be harmful to human health (Pope 2011).

Thirdly, and a little more specifically:

Potential human health impacts are only beginning to be known. These health risks
include exposure to hazardous chemicals that are applied to plantations of transgenic
trees and harmful effects of inhaling pollen from trees that produce a Bt toxin (a o-
endotoxin, such as Cry1Ab or Cry1Ac (CHK)...

A series of studies published by scientists from Cuba and Mexico found that Cry1Ac is
a potent systemic immunogen (e.g. evokes an immune response), as potent an adjuvant as
the cholera sub-toxin, binds to gut cells and is capable of causing changes in the
permeability of the gut (e.g. Vasquez- Padron et al., 1999a, 1999b, 2000)...

Finally, the risk of immune response via inhalation is larger than the response from
ingestion as inhaled substances are not exposed to gut digestive enzymes as they go
directly into the circulatory system... (Global Justice Ecology Project, et.al., No
date:1)

Note also:

We do not think that the human health data that EPA currently has are adequate. In
particular, EPA seems to have ignored a crucial study that suggests that the Bt delta
endotoxin is an inhalant allergen, which could present risks, in an occupational
sense, to farmworkers and millworkers that are exposed to dust from the processing of
Bt crops (Hansen 2000).

And further, what does escape from crops or a plantation can be trangenically highly mercurial, perhaps including being unpredictable in ways similar to how pesticides can morph into even more toxic metabolite configurations, and certainly being unquantifiable in terms of ultimate impact:

...the phenomenon of post-translational processing, which consists of the modification
of a protein after it has been translated from the genetic message. And such post-
translational processing can have a significant impact on the structure and function

> of a gene. Furthermore, post-translational processing can differ between organisms, so that the same gene expressed in different genetic backgrounds may have the same amino acid sequence but may differ in structure and function. Examples of such processing includes glycosylation and acetylation (ibid.).

Put another way:

> Further evidence that most if not all commercially approved transgenic lines are genetically unstable and non-uniform has come to light. The transgenic lines fail to satisfy the current EU Directive requirements for proof of genetic stability and uniformity, and are hence illegal. Dr. Mae-Wan Ho reports.
>
> In a recent study [1] on five commercially approved transgenic lines carried out by two French laboratories [2], all five transgenic inserts were found to have rearranged, not just from the construct used in transformation, but also from the original structure reported by the company. This was clear evidence that all the lines were genetically unstable...
>
> The studies also revealed a discrepancy in regulatory practice. UKís Advisory Committee on Novel Foods and Processes (ACNFP) and the Belgian authority both appear to have allowed Monsanto to submit new molecular data on Roundup Ready soybean when independent analysis revealed its insert had rearranged (Institute of Science in Society 2003).

Therefore:

> This everyday extreme variation is proof of the instability of transgenic genomes, their propensity for ongoing mutation, and their changeability in response to environmental factors ("Russ" 2014).

And in terms of tree plantations:

> Trees are being primarily engineered for insect resistance (with the Bt gene), tolerance to glyphosate, reduced lignin, and faster growth. The escape of any of these traits into native forests (considered inevitable given the unreliability of

sterility technologies), is likely to unleash devastating impacts on native forest ecosystems. Potential impacts include: Contamination with the Bt-toxin insect resistance will decimate insects sensitive to Bt-toxin, such as Lepidopterae (butterflies and moths), and potentially their predators (Hilbeck, 1998) and further impacting on bird populations, ultimately disrupting forest ecosystems for which insects are an integral component. Contamination with the low-lignin gene resulting in forest trees that cannot resist insects, disease or environmental stresses like wind. Escape of the gene for faster growth leading to transgenic trees out-competing native trees and plants for light, water and nutrients and leading to soil loss and desertification (Global Justice Ecology Project, et.al., No date:1).

All the above means nothing less than mass transgene ESCAPE:

...there is general agreement that the most serious concerns arise when genetically engineered organisms could cause self-perpetuating injury to commercial or natural ecosystems beyond the immediate area of release (Raffa, et. al. 1997:250).

And here's an indication of toxicity to Multiple Chemical Sensitive individuals (like me):

Among the issues are the possible spread of allergens, the invitation which herbicide tolerant crops give to over-use of herbicides, possible adverse effects of new toxins (such as the Bt endotoxin) on some people, and the emergence of antibiotic resistance which may be fostered by the use of antibiotic resistance genes in almost all transgenic crops (Sierra Club 2014).

...animal studies of the effects of Bt published in Natural Toxins found that Bt remains active in mammals that have eaten it and may in fact bind to the intestines, leading to "significant structural disturbances and intestinal growths (Global Justice Ecology Project,et. al, No date:1).

I am one of the MCS "some people".

5.1.3.2 POLLEN INCLUSIONS

And if the occupational environment is a rural area, then how can people on farms and in towns be protected from the bioaerosols emanating from, for example, a pine or Eucalyptus nitens plantation during storms or operations? The answer is, they can't. As a matter of the simple and overtly obvious in terms of an organic bioaerosol and wind, locals where I live have testified to almost suffocating on pine tree pollen in the spring. They have experienced a range of morbid irritation symptoms over a period of weeks from the pollen (such as allergic rhinitis and allergic conjunctivitis), but the most obvious dynamic is barely being able to breathe out in their paddocks when the wind whips up a massive cloud of pollen as they race back to the house for shelter. It is possible, given the magnitude of these monoculture cloud events, that someone could experience an asthmatic attack or heart attack:

> Precocious pollen production has important implications for fertilization and pollen dispersal from young, dense stands. Increasing levels of airborne pollen raise concerns for escalating rates of human respiratory disease (Ladeau & Clarke 2006:541).

Also:

> "We have no control over the movement of insects, birds and mammals, wind and rain that carry pollen and seeds. Genetically engineered trees, with the potential to transfer pollen for hundreds of miles carrying genes for traits including insect resistance, herbicide resistance, sterility and reduced lignin, thus have the potential to wreak ecological havoc throughout the world's native forests["]. --Dr. David Suzuki, The Suzuki Foundation" (Global Justice Ecology Project, EcoNexus, Friends of the Earth International, Global Forest Forum and World Rainforest Movement, No date).

> Engineering trees to produce Bt toxin could be far more dangerous. Pines are known for heavy pollination, spreading pollen for hundreds of kilometers. Establishment of plantations of pines that produce Bt pollen could potentially lead to widespread outbreaks of sickness...

> G. Sing et al. (1993) found pine pollen in Northern India more than 600km from the nearest pines. Pollen models created in 2004 by Duke University researchers

demonstrated pollen from native forests in North Carolina in the U.S. traveling in air currents for more than 1,200km north into eastern Canada. This means that transgenic trees cannot be regulated only at the national level. Transboundary contamination of native forests with transgenic traits is virtually assured (Global Justice Ecology Project, et.al., No date:2).

5.1.3.3 PESTICIDE INCLUSIONS

As a small recap, agricultural and plantation operations can be toxic from the pesticide/herbicide perspective:

Spray operators have been shown to be dermally exposed to paraquat by walking through recently sprayed vegetation and into their own spray, regular adjustment and unblocking of spray nozzles and leakage, and overfilling of knapsack spray tanks. Carriers also received measurable dermal exposure from walking through recently sprayed vegetation and accidental spillage when carrying and loading (Chester & Woollen 1982).

Herbicide applications cannot occur without exposures occurring, both for the operator and the public (via spray drift and volatilization drift). Herbicide use is inherently a messy and highly toxic procedure. Spills will occur, blockages of equipment will occur that need to be unblocked, and people WILL be exposed even to just that spray that has been'competently' applied without drama. The exposure and poisoning of agricultural or plantationoperators and even people nowhere near the application site does not stop, however, with them:

Several studies link pesticide exposure by both parents and children to leukemia. The pattern of disease suggests that some damage to chromosomes may occur before the child is born (3)...

Several studies have linked leukemia to pesticides. Two recent reviews concluded that pesticide exposure may be a cause of leukemia (10)(11). These reviews report that most, though not all, studies find leukemia was more likely in children whose fathers were exposed to pesticides at work than other children.

Children of fathers with jobs including pesticide exposure had a 2.7 times higher risk

of leukemia when compared to controls (17) (www.envirohealthpolicy.net 2001).

And a little more specifically:

> The current chronic kidney disease epidemic, the major health issue in the rice paddy farming areas in Sri Lanka has been the subject of many scientific and political debates over the last decade...
>
> Here, we have hypothesized the association of using glyphosate, the most widely used herbicide in the disease endemic area and its unique metal chelating properties. The possible role played by glyphosate–metal complexes in this epidemic has not been given any serious consideration by investigators for the last two decades. Furthermore, it may explain similar kidney disease epidemics observed in Andra Pradesh (India) and Central America. Although glyphosate alone does not cause an epidemic of chronic kidney disease, it seems to have acquired the ability to destroy the renal tissues of thousands of farmers when it forms complexes with a localized geo environmental factor (hardness) and nephrotoxic metals (Jayasumana, et. al. 2014:2125–2126).

Note also these studies:

SÈralini, G.; Cellier, D.; de Vendomois, J. New analysis of a rat feeding study with a genetically modified maize reveals signs of hepatorenal toxicity. Arch. Environ. Contam. Toxicol. 2007, 52, 596ñ602.

Benachour, N.; Sipahutar, H.; Moslemi, S.; Gasnier, C.; Travert, C.; Seralini, G.E. Time- and dose-dependent effects of roundup on human embryonic and placental cells. Arch. Environ. Contam. Toxicol. 2007, 53, 126ñ133.

Benachour, N.; Seralini, G.E. Glyphosate formulations induce apoptosis and necrosis in human umbilical, embryonic, and placental cells. Chem. Res. Toxicol. 2009, 22, 97ñ105.

Gasnier, C.; Dumont, C.; Benachour, N.; Clair, E.; Chagnon, M.C.; Seralini, G.E. Glyphosate-based herbicides are toxic and endocrine disruptors in human cell lines. Toxicology 2009, 262, 184ñ191.

Also:

> Throughout the first years of life, children undergo rapid growth and development, and
> their complex, delicate developmental processes may be easily interrupted and derailed
> by pesticides. A single pesticide may affect multiple processes and multiple
> pesticides may affect a single process (Miller et al 2002). Exposures are especially
> damaging during critical windows of vulnerability in which children are particularly
> susceptible to damage.
>
> These windows occur from the period around conception until adolescence, depending on
> the organ system; organ systems undergo rapid change and extensive growth both
> prenatally and in the first few months after birth, in some cases even for years. But
> the unborn foetus and newborn are at greatest risk, and interference with their
> developmental processes can lead to lifelong alterations in behaviour, growth
> and development, and disease occurrence (Watts 2013:36-37).

Pesticide exposure damage transmits through time and across generations (note other comments in this essay regarding epigenetics).

What might just be very appropriate at this point is a very large epidemiological survey of morbidity in children whose fathers/ mothers are subject to pesticide handling at work (how many industries would cooperate with this, and how many workers who became involved would be penalized by their employees?). How many "children of the corn" and plantation children would register as bearing a statistically significant amplification of cancers over a control group? However, would it be too embarrassing for too many attempting to measure just how much pain there is out there in our little kids? Could we care enough to reveal whatever the ugly truth is likely to be? Would we, as caregivers of the next generation, want to be burdened with knowing just how much potential has been lost in our little ones due to the supposed NEED to spray toxics with the unexamined assumption that this will make things grow better and earn the company more (what more could you corporately wish for?).

What if MORE is actually LESS?

And when LESS is measurable in the death of a child here, there, and everywhere, from Non-Hodgkin's Lymphoma, how will we quantify THAT KIND OF "LESS"? Will we still stupidly spout the "balance the pros and cons" techno-chemical philosophical mantra when the LESS is FINALLY intelligently understood to represent A MOVEMENT TOWARD EXTINCTION?

5.1.3.4 BIOSOLIDS, RUNOFF, DUST & HUMAN EXPOSURES

Here, I am looking at the potential for biosolids applied to plantations to affect human health, either by contact with biosolid pathogens on site or later, after pathogen migration.

Agricultural and plantation operations can be toxic from a biosolids perspective:

> Application of... [wastewater treatment] biosolids to pine plantations is a practice increasing worldwide due to the benefits of biosolids as a soil amendment. The regulations allow biosolids that may contain pathogenic organisms to be landapplied. In the case of pine plantations, the general public is not physically excluded from the area resulting in a situation arising whereby exposure of the biosolids to members of the general public can occur. This potential exposure results in a human health risk becoming present.
>
> Instances of pathogen survival post-application of biosolids have been observed indicating that the risk to human health is certainly present... The airborne pathogen risks through the formation of biosolids dust and the occurrence of plantation burns that may cause pathogens to become airborne in the smoke of a burn, were investigated. E. coli, Salmonella spp. and Clostridium perfringens were the pathogen indicators selected for this study.
>
> The results show that the pathogen levels in the land-applied biosolids pose a risk to members of the public and plantation workers via direct exposure for the first 3 months post-application. After 2 months E. coli was observed to have undergone significant die-off, Salmonella spp. was observed to be at undetectable levels after 3 months. However 11 months post-application in the following winter season, Salmonella spp. returned to high levels that would pose a human health risk. Clostridium perfringens remained at high levels throughout the 1 year monitoring period. During this initial monitoring period, a relationship between moisture content and pathogen populations was observed. Salmonella spp. indicated the strongest relationship with a

return in its population from undetectable levels to high levels when an increase in moisture content was observed.

The formation of biosolids dust was an issue raised, and more specifically whether pathogens could become airborne with the dust... Clostridium perfringens was the exception as this pathogen was observed to survive within biosolids dust.

The pathogen risk from direct exposure is present for all individuals who come into contact with the biosolids during the initial 3 months post-application and, due to pathogen re-growth or re-colonisation, the following winter season when moisture levels are increased (Levitan 2010).

This thesis noted that only occupational exposures were likely, however the admission that people could enter plantations automatically means that the public is exposed as well. It should be further considered that movement of pathogens from plantations with surface runoff and groundwater poses risks to creeks and rivers, and human health recreational activities and drinking water also. With canoeing and other activities, contaminated water could be transported to homes where pets or children could gain access.

C. perfringens in airborne dust sourcing from biosolids dust could pose risks at distance from the plantation application site, and even during/after a fire or rubbish burn, likely because "C. perfringens spores can survive high temperatures" (CDC 2014).

5.1.3.5 HORIZONTAL Bt GENE TRANSFER ON THE HEELS OF TRANSGENIC MANIPULATION

Here, I am briefly looking at the potential for horizintal gene transfer to create environmental health problems. The implication here is that pathogens from biosolids could accommodate this transfer.

Note the following:

Bacillus thuringiensis is the most widely applied biological insecticide... ...plants engineered with the cry genes encoding the B. thuringiensis crystal proteins are the most widely cultivated transgenic crops... Escherichia coli engineered to produce the B. thuringiensis insecticidal toxin killed gypsy moth larvae... (Broderick, Raffa & Handelsman 2006:15196).

I believe that information located elsewhere in this Essay (e.g. 5.1.4.1, below) and the above portends the extremely high likelihood that naturally resident bacteria or that introduced via human activities will horizontally take on B. thuringiensis encoding and result in the decimation of massive insect populations. If E. coli can be encoded via manipulation, then that type of gene transfer (and more) will be able to take place spontaneously in nature. This will result in an entirely uncontrollable series of disastrous genetic events affecting soil health, insect and insectivore health, not to mention pollination.

Note:

> ...these [transgenic Cry] toxins may accumulate in the soil in an active form
> and this may affect soil invertebrates not normally in contact with Bt toxins.
> Finally, the remote possibility of horizontal gene transfer to other bacterial
> organisms must also be considered given the greater persistence of the DNA in the
> environment (Lorenz and Wackernagel, 1996). Assessment of these risks requires
> both rigorous and independent scientific examination (Sanchis 2010:226).

It should be noted that the warning "rigorous and independent scientific examination" (ibid.) comes well after the technology has already been put to worldwide use... One sees these kind of after-the-fact warnings in scientific literature all the time. For example: "known horizontal transfer activity" and "We recommend including the above-mentioned items into the premarket safety assessment of genetically modified crops carrying transgenes..." (Kleter, Peijnenburg & Aarts 2005:326). These quotes demonstrate clearly that we are interferring deep inside Nature with no realistic or worthwhile reservations whatsoever. There is no censorship of human invention. Only the chase after mega dollars.

5.1.4 EXTENDED GMO GENERALITIES: BROAD PANDEMIC POTENTIAL & MASTER CONSPIRACIES

5.1.4.1 PANDEMIC POTENTIAL

What is the potential for pest infestations and disease to rampage through (and beyond) monoculture plantation crops in the event of the development of widespread insect resistance to GMO plants? What about recombinant DNA dynamics?

> The potential for insects to evolve resistance to GM insecticidal plants is considered
> to be one of the main threats to this technology, since resistance to Bt sprayable
> products has been demonstrated (Ferre, Van Rie & Macintosh

2008).

And:

> ...the continued exposure of pests to Bt toxins has selected for many resistant insects (Tabashnik et al. 1990; Talekar & Shelton 1993; Tabashnik 1994; Bauer 1997; Tang et al. 1997; Speight et al. 1999). Such resistance is thought to have developed through continued exposure to sprays on non-transgenic crops, and where these sprays have persisted in the soil following application (Saxena et al. 1999) (Coventry 2001).

And:

> In transgenic virus-resistant organisms, recombination between viral transgenes and invading viruses could lead to increased virulence and undesirable effects on wild hosts existing in natural habitats (Snow et al., 2005). Little is known yet on the regulation and activities of the pathogenic microorganisms and viruses inserted in the transgene construct (e.g., CaMV) (Quist et al., 2007), which increases the uncertainty about how they could impact wild fauna and farm animals (Catacora-Vargas 2011:25).

Imagine the famine that would ensue if corn and cotton crops worldwide engage disease and/or insect infestation after their pests gain resistance. Worse, imagine the impact on public health after a potential synergy occurs between 'normal' exposures to endotoxin aerosols and the diseases exploding out of the pest resistance? That is: massive and widespread insect devastation of crops releasing monstrous (but likely mostly invisible) organic dust clouds of endotoxin. Famine would follow and would be concurrent with the diseases that would opportunistically amplify on the basis of a low-level immune dysfunction in immune compromised people exposed to the GMO endotoxins for years. Imagine the overlapping devastation. Parallel pandemics (there is much more that could be factored into that nightmare scenario).

Just as a small example of how impossible it is to put controls on GE and have any confidence in human ingenuity, note this information:

> There is a possibility, however, of gene transfer from B.t. cotton to wild or feral cotton relatives in Hawaii, Florida and the Carribean (epa.gov 2001).

Continuing with the GMO escape theme and ignoring pesticide

toxicities for a moment. What else should give us 'confidence' in GMO technologies?

A large-scale application of transgenic Bt-plants may result in long-lasting negative impact on the environment. First, the cultivation of these plants leads to accumulation of Bt-toxins in soil. Second, the decomposition of transgenic plants takes significantly longer time compared to that of isogenic lines. Third, the biological activity of soils under transgenic crops is lower than in the control plots. The transfer of o-endotoxin-encoding genes to the genome of agricultural crops affects simultaneously several entirely different traits of genetically modified plants, thus exerting pleiotropic effects. This gives rise to a paradoxical situation: the genetically engineered crops selected on the trait of resistance to herbivorous insects of the order Lepidoptera become more attractive for herbivores from the other order, Homoptera (Victorov 2008).

A little more on "pleiotropic", and also highlighting a critical aspect of the aberrations in thought that are now standard inside the insane world of toxics 'regulation':

Unintended crop attributes. ëPleiotropic effectsí may occur when new genes are inserted into plants to give the plants desirable new traits (i.e. more than one change may occur in a plant as a result of the new gene). The US Food and Drug Administration (FDA) policy regulating transgenic crops assumes that pleiotropic effects will not occur, and that genetically modified crops are ësubstantially equivalentí to conventional crops. This policy was implemented despite concerns raised by government scientists that it failed to adequately address risks to the environment or to animal and human health posed by pleiotropic effects.

Memos written by FDA scientific staff indicate that pleiotropic effects may indeed occur when new genes are inserted into food crops: ìUntil more of these experimental plants have a wider environmental distribution, it would be premature for FDA to summarily dismiss pleiotropy" and "Pleiotropic effects occur in genetically

engineered plants... at frequencies up to 30%. Most of these effects can be managed by the subsequent breeding and selection procedures. Nevertheless, some undesirable effects such as increased levels of known naturally occurring toxicants, appearance of new, not previously identified toxicants, increased capability of concentrating toxic substances from the environment (e.g., pesticides or heavy metals), and undesirable alterations in the levels of nutrients may escape breeders' attention unless genetically engineered plants are evaluated specifically for these changes. Such evaluations should be performed on a case-by-case basis, i.e., every transformant should be evaluated before it enters the marketplace." Instead of heeding theses concerns, FDA issued biotech food rules that assume no pleiotropic effects will occur, therefore no additional safety testing of transgenic crops is required (Grubinger 2000).

And, in terms of GE trees:

Besides destroying native forests for eucalyptus plantations, the commercial use of cold-adapted eucalyptus could result in the escape of these GE trees (via seed or asexual vegetative reproduction) into ecosystems and forests where they could out-compete native vegetation and displace wildlife. Furthermore, the southern US, where establishment of commercial GE eucalyptus biofuel feedstock plantations is now being considered, is known to be subject to strong storms, including tornadoes and hurricanes, which have the potential to distribute eucalyptus seeds over very large areas from tens to hundreds of kilometres (Petermann 2008).

5.1.4.2 MY SYMPTOMS

As an aside, I have experienced a significant and distressingly painful increase in joint and muscle myalgia in the 9 months I have lived in south to south-west Tasmania after moving from a township to a rural location surrounded by E. nitens and pine plantations (not one of my best decisions). Overt joint inflammation in the knees, right hand and elbows have also featured, along with a considerable increase in chronic fatigue. As well, increasing chest congestion with myself and my son posts up suspicions of bioaerosols affecting our respiratory systems, an area of concern in myself that

cleared up considerably when I moved from Sydney's perennial air pollution to New Norfolk, but which has now reappeared (along with the other above-listed aggravated symptoms) in my current rural/ plantation setting.

Another concern: Our water supply arises from a stream immediately adjacent to plantation areas that may well have been sprayed with herbicides in past decades (and which therefore may harbor a significant reservoir of toxic chemical residue) and which are potentially earmarked for future spraying (hopefully not). My neighbor has suggested that significant spraying has taken place throughout the pine plantation because the plantation exhibits almost no blackberry infestation, this being a very typical and common signature of most other disturbed and waste areas in this location. Due to his concerns he decided to stick with rain water instead of tapping into the perennial stream water.

As a result of my research, I now have some considerable concerns about the E. nitens plantations (and domestic plantings) in particular because I am incredibly chemical sensitive (from initial pesticide poisoning in Sydney; see: http:// poisoningandlegalaction.com.au/reports/MurrayThompson_Symptoms-From-Original-Poisoning-17.pdf).

Essentially, I am a barometer of environmental and chemical vapor conditions around me. For example, I can walk up two streets in a township near here and experience horrible chest pains, while not experiencing those pains at all along other streets. If I wear a good quality chemical filter in a respirator, I will not experience those pains in those two streets at all. The streets are on the opposite side of a hill where a waste dump is situated and may well have a direct link via an underground gravel seam (or similar) to leachate sourcing from the dump (this occurred in Sydney at the Castlereagh Waste Management Centre in north-west Sydney).

Still continuing with my now extended personal issue: there are plenty of Eucalyptus nitens in our area, so my aggravated joint pain symptoms could potentially be the result of, not necessarily only pesticide spray applications, but endotoxin aerosol exposures from the trees, as well. I have to ask: and what of the internal (DNA, etc.) nature of the pollen coming off these trees? Recall the Raffa, et.al. (1997) and Global Justice Ecology Project, et.al. (no date) quotes in previous sections.

It should also be noted that life, commerce and technologies are dirty and complex, and are therefore over time always plagued by inevitable accidents. Pesticide spills can occur during normal spray operations that can add to the chemical burden being absorbed by the pesticide application site and extended region of potential chemical influence, spills that most people never hear of (sometimes these incidents are not reported or documented; see Endnote #5). In terms of the Bleaney/Scammell issue above:

> It turned out that five weeks prior to that flood event

[linked with the oyster
deaths] there had been a helicopter crash carrying pesticides and herbicides in the
upper catchment, apparently aerial spraying trees. And this was the first that
Iíd heard about plantations in that area. When we started to look at the size of the
plantations it became apparent that here was a very large source of potential toxic
chemical (Scammell 2010).

As well, with any commercial activity, machinery can spill fuel, oil or brake fluids during these operations, and these contaminants can migrate into streams or concrete slabs especially -- but not exclusively (see Endnotes #1 and #4) -- downhill from those operations.

As a matter of reminder and recommendation here (where the investigations and discoveries and repudiations of findings never really end), the essential plea in this section is the avoidance of "large acreage, fast-rotation toxic monoculture eucalypt plantations -dependant on pesticides - in our upper and mid water catchments" (TasmanianTimes.com 2011). Although the nature of the problems might not yet be absolutely certain (invisible chemicals and their sponsored imbalances require many veils to be removed in order to reveal concrete epidemiology), the certainty of destabilization of ecosystems in favor of aberrant GMO monocultures should stand as an obvious signature and self-evident warning, wherever these commercial activities have occurred, of inevitable wide-ranging ecological and human health issues arriving after the fact of the bad science stampede.

Could anyone predict the consequences of interferring with the genetics of a plantation species? Yes. You can know now (because of the internal consistency that exists within the heavy burden of after-the-fact research that swings around all our necks) that the consequences of a GMO-ANYTHING will be toxicologically negative in the EXTREME. The negative effect(s) will exist on a continuum somewhere between certain human/ecological morbidity (where even 'minor' morbidity is a subtraction from your or Nature's optimal potential) and an outright parallel pandemic storm.

Endless postmortem analyses ultimately splatter from the fan (and government/industry repudiation of independent eco and human health reports) when we, as a rampantly commercial culture, surrender so utterly and unthinkingly to a glossy infatuation with interference in Nature. When we throw so many commercial invasion/development, GMO and chemical fix spanners into Nature's works via let's-get-rich-from-this-and-let's-worry-about-the-effects-later types of innovation and invention (blundering), all that REPEATS over and over is the usual litany of resulting human health impacts, expensive discovery of causes, victim stress and debility, hand wringing, hired repudiation and official reversals, legalities, politics... and on and on. And yet, all this waste of energy and

health potential could have been avoided if we had UTTERLY PRECAUTIOUSLY examined our thinking first before acting on bad science, and then decided we'd be smarter by not throwing the spanners at all!

In other, less discreet, words: we intelligently decided we would not technologically shit where we eat, sleep, reproduce, live, work and holiday...

5.1.4.3 THE HUMAN HEALTH BIO-TERRORISM EXPERIMENT: GMO MASTER CONSPIRACIES

The consistency of operation of a corporation tells you what its character and intentions are. Its actions are a roadmap leading to a series of destinations:

> The data is startling and confirms a clear conclusion. The proliferation of untested, unregulated GM foods in the span of a decade is more a leap of faith than reliable science. Microbiologist Richard Lacey captures the risk stating: "it is virtually impossible to even conceive of a testing procedure to assess the health effects of (GM) foods when introduced into the food chain, nor is there any valid nutritional or public interest reason for their introduction." Other scientists worldwide agree that GM foods entered the market long before science could evaluate their safety and benefits. They want a halt to this dangerous experiment that needs decades of rigorous research and testing before we can know.
>
> Unchecked and unregulated, human health and safety are at risk because once GMOs enter the food chain, the genie is out of the bottle for keeps. Thankfully, resistance is growing worldwide, many millions are opposed, but reversing the tide wonít be easy.
> Washington and Ag biotech are on a roll with big unstated aims ñ total control of our food, making it all genetically engineered, and scheming to use it as a weapon to reward friends and punish enemies (Lendman 2014).

5.1.4.4 BACTERIAL-ENDOTOXIN TESTING

And, insofar as the existing lack of standardization in airborne endotoxin testing is concerned, the following should be carefully noted:

Some authors suggest that endotoxin exposure may be underestimated because part may be non-soluble and therefore is not detectable because it is not extracted in aqueous media.

Eduard et al.55) studied the solubility of the endotoxins from Escherichia coli and Pseudomonas aeruginosa, determining the amount of 3-OH-FA by GC/FID in the soluble and insoluble fractions separated by centrifugation; it ranged from 9% to 83% and they suggested that the LAL test may underestimate endotoxins in environmental samples because the non-soluble fraction remains undetected.

Rylander56) suggests that the Limulus method detects only about a third of the biologically active endotoxin and that the remainder is present inside the fragments of dust particles/bacterial cells, but still able to exert effects when deposited in the lung. If substantial differences in the proportion of soluble endotoxins in different work environments is confirmed in future studies, the contribution of non-soluble endotoxins must be taken into consideration56) (Paba, et. al. 2013:249).

Further:

...plate counts are subject to error because bacteria exposed to the air may remain viable yet lose the ability to form colonies, i.e., they become viable but nonculturable. If airborne bacteria exhibit this phenomenon, colony formation data will significantly underestimate the bacterial populations in air samples. ...culture techniques did not provide an adequate description of the bacterial burdens of indoor air (i.e., less than 10% of the aerosolized bacteria were capable of forming visible colonies). It is concluded that total cell count procedures provide a better approximation of the number of bacterial cells in air and that procedures other than plate counting are needed to enumerate bacteria in aerosol samples, especially if the public health quality of indoor air is to be estimated. Indoor air pollution, both bacterial and abiotic, has become a very serious concern (25). ...building air is

> recycled through buildings, resulting in increased numbers of bacteria in the air (26,
> 28), with the result that ca. 10 to 25 million workers in the United States show
> symptoms of "sick building... (Heidelberg, et. al.:1997).

I believe that the above issues of endotoxin exposure and bacterial count under-estimation will leave initial excursions into the area of bioaerosol emanation from GMO plants favorable for those hoping that this potential, unexposed, does not add to the already long list of intrinsic GMO faults and liabilities. However, I have no doubts that later research will demonstrate that GMO bioaerosols will be seen to be contributing to Sick Building Syndrome worldwide.

What might disturbingly relate to the above issue is this research, especially the CAPACITIES of "non-culturable bacterial enteropathogens" (Colwell, et. al. 1996):

> Vibrio cholerae O1 can enter a state in which they remain viable but are non-
> culturable. Presumably, such bacteria can be pathogenic if they retain the capacity to
> proliferate in the human intestine following ingestion. Two groups of volunteeers were
> given inocula containing viable but non-culturable V. cholerae O1 of the attenuated
> vaccine strain CVD 101 (viable CVD 101 organisms readily colonize the human
> intestine). Volunteers in one of the two groups excreted viable CVD 101, demonstrating
> that, in the environment of the human intestine, previously non-culturable vibrios can
> regain the capacity to multiply. These observations support the proposition that
> viable but non-culturable bacterial enteropathogens may pose a potential threat to
> health (ibid.).

And, although the immediately above relates to waterborne pathogens, I see potential for pathogenic bio-aerosols (including non-culturable live bacteria, and not just endotoxins; and one should also not forget the pollen component of Primary Biological Aerosol Particels (PBAP) with high allergenic potential (Pˆhlker, et. al. 2013)) from GMO plants to:

1. be inhaled by animals and humans,
2. be underestimated in enumeration,
3. remain somewhat latent inside human hosts (where the bacteria could also ultimately migrate between organ systems).

None of this is good news for GMO .

The KEY POINT is: "Life finds a way" (Jurassic Park, 1993). And the "life" modern GMO science makes is monsters, morbidity and extinctions.

5.1.4.5 BRIEF: PLANTATIONS & ASTHMA

I have left out of the following quoted material information regarding other natural irritants for asthma, of which there are many. In this study the natural chemicals emitted from pine trees produce human health issues. Note:

> New Zealandís incidence of asthma is similar to Australiaís...
>
> New Zealand logging has been a well established industry for more than a century because of the rich endowment of large trees with valuable timber. Planted forests account for 1.7 million hectares and most of it is radiata pine which provide a steady source of pinene and sesquiterpenes as well at flowering time especially. One third of the planted forests are in the central north island.
>
> Figure 6.01 shows a map of high asthma areas...
>
> The areas in the North Island correspond with the forestry areas especially (Gibbs 2006:267-268).

What I wish to highlight here is that you cannot logically expect to get away with the monoculture paradigm without incurring a raft of penalties. We have seen that the invasion of Nature can generate many critically serious problems in terms of disease and even pandemic potential. And this is even without the introduction of GMO plants into the overall unexamined and stampeding mix of perverse human development disasters.

And then, when we push this presumptuous envelope further to include:

1. chemically dependent monocultures (see below), with this approach to agriculture and forestry being representative of an extreme corporate demand for technological fix control (denying the truism that "you cannot fix problems with the same mentality that created them" -- Einstein paraphrase) and concentration of earning potential, and
2. the additional monumentally ignorant rush for assumed genetic superiority...

...all we are doing is hosting a feverish obsession in the impossible (one that controls US), and all we can accomplish from this is THE USUAL: a passing train wreck of nonsense experimentation that hopes for what it cannot possibly have.

5.2 ECOLOGICAL RAPE & POLITICS

The politics of the matter:

A photograph in a brochure of the important South Esk catchment vividly illustrates part of what is happening in Tasmaniaís water catchments.1 The surrounding terrain was cable logged of all vegetation and a plantation of young eucalyptus established that is regularly sprayed with known harm-causing chemicals. These chemicals inevitably enter the water supply. This same brochure reveals:

In the last four years alone, these rivers have been contaminated with poisonous pesticides: the Duck, Inglis, Bird, Jordan, Montagu, Prosser, Rubicon, South Esk, George, Little Swanport, Macquarie, Great Forrester, Brumby Creek, Derwent and Liffey Ö forestry plantations are now growing in 44 of the Stateís 48 water catchments. Ö Water testing by our state government is done sporadically and pesticide detections rarely result in investigations to find their source

Poisoning water supplies and destruction of soil quality because of chemically dependent monoculture plantations needs to be stopped, as does the continued slaughter of our native forests. The health of people in Tasmania is subject to unreasonable risk by virtue of toxins in our water.2 Yet a Government report cleared the George River (at St Helens) of any toxins, eliciting this response from Dr.Lohrey: ëThis is one of the most dubious reports I have read in a long time. It appears to have been written and made public with one aim in mind ñ to stifle community debate about water quality in the George River.í3 (Bound, Biggs & Obendorf 2012).

6.0 PESTICIDES' MISAPPROPRIATED DESTINATIONS: SPRAY DRIFT & MIGRATION

6.1 DRIFT

Once released into the environment, only with extreme difficulty and great expense can these exotic and highly toxic herbicide chemicals and their often more toxic (and all-too-often, UNKNOWN) metabolites

be monitored or tracked (lab tests are expensive, and will not necessarily identify all chemical culprits). And, further, most of the herbicide chemical ultimately wastefully and dangerously passes by its target plant:

> 95% – 98% of applied pesticides miss their target, reaching nearby people and wildlife, waterways, soil and air (Miller G.T., 2004).

Pesticides uniformly end up elsewhere (usually where we are and beyond...) via spray drift or "volatilization drift" (Source: http://www.scientificamerican.com/article.cfm?id=pesticide-drift). For example:

> "Atrazine can be transported more than 1,000 km (621 miles) from the point of application via rainfall and, as a result, contaminates otherwise pristine habitats, even in remote areas where it is not used," they [researchers and colleagues from the University of California Berkeley] added, citing other researchers.
>
> "In fact, more than a half million pounds (227 tonnes) of atrazine are precipitated in rainfall each year in the United States" (Fox 2010).

Also, from Australia:

> We have been impacted by Plantation aerial spraying a cocktail of chemicals and have Simazine ("A pre-emergence, translocated, root absorbed soil-residual herbicide" [Source: http://www.herbiguide.com.au/Descriptions/hg_Simazine_Flowable_500.htm]) in our farms water supply 3 years after the event... Authorities do not enforce the laws and the regulators (APVMA) allow chemical use without stipulating MRL. In our case we find Simazine has no maximum residue level in soil. Water limits are also not clearly defined, eg. 10ppb for catttle 20ppb for humans. Yet in America the limit is 4ppb. Its all a bit hit and miss, and we agree with your articles that we will destroy the earth with chemical poisoning before climate change does, Although we suspect chemical pollution will assist climate change to act faster' (Anonymous post made to my poisonedpeople1 WordPress account, 2014).

And following up after the above comment, an email:

> Recent chemical testing by EPA confirms Simazine (banned for

use in Agriculture in the
EU) is still flowing off the plantation and through our property albeit [in] low
levels (ibid.).

Plantation owners beware. You are leaving yourselves open to litigation if you cannot control the trespass of your chemicals! Note:

Most sprayed plantations lead to pesticide pollution of neighbouring streams. Is the
plantation owner accountable for this pollution, or is the spraying contractor or the
pesticide manufacturer responsible?...

In September 2012, a contractor aerially spraying over Hancock pine plantations in
central Victoria [Australia] was fined $10,000 for spray drift which spread over 200
hectares of neighbouring King Lake National Park and Black Ranges State Forest. The
spray event occurred over a 10 day period in April 2010 over lands adjoining several
plantations. The vegetation that suffered from the spray drift was recovering from
the 2009 bushfires which devastated much of the region. It has since been determined
that eucalypts that regenerate after bushfires are far more sensitive to the herbicide
glyphosate than previously realised.

Who is ultimately accountable for a spray incident that goes wrong in an FSC certified
operation? Hancock themselves were not fined but the contractor working for them was.

If a spray contractor follows current label rates for glyphosate, this may be far more
toxic in fire damaged landscapes than previously realised. Will glyphosate labels now
have to be amended to incorporate this new possibility? (Amis 2013).

Aerial spraying:

It is too early to tell how extensive the problem will be, but I have looked at
several cases involving several hundred acres each. In some, the pilot could not
believe the herbicide behaved in the manner that it did. In others, the ground
applicator believed the setup he was running would not result in drift under any
conditions...

In a couple of the situations I have looked at already, the drift produced symptoms for 2 miles. The applicator has a good reputation and during the time the applications were made, it was not particularly windy. The applications were made over wet soil...

I will remind everyone again of several things. First, there is a 10-mph wind restriction on most glyphosate applications this year.

Second, you cannot blow it toward rice ó it will go farther than you think. It does not have to be very windy for it to go a mile or more from an aerial application ó especially over a wet soil.

Third, even if you are running air induction tips and low drift in a ground rig, you cannot apply it adjacent to a susceptible crop with the wind blowing across the susceptible crop (Baldwin 2007).

Spray drift damaging a neighbor's crops?

I'll tell you how bad one situation was. The farmer and I were looking at his fields, and I was afraid he was going to cry. I knew if he did that I would so I jokingly asked if he were a "drinking man."He said, "Yes, as a matter of fact I have a couple of warm ones in the back. "His fields looked so bad they made a hot beer actually taste good! (Baldwin 2006).

Drift and migration?

The origin of pesticides detected at the control sites situated within sub-catchments containing land uses not likely to use certain pesticides is unknown. The movement of pesticides is not limited to downstream, as aerial or groundwater drift can potentially transport pesticides upstream or across sub-catchments (Mossop, et. al. 2013:6).

This is scary. What does the above REALLY say? That chemical herbidides are a BAD IDEA and technology from top to bottom and left to right and inside out. The concept of synthetic pesticides represents absolute rubbish science, and it is an affront to human intelligence that so much research goes into analyzing the drift,

migration and damage caused by these obscene toxins. Look at what we have to deal with:

> The source of phenoxy herbicides at control sites is unclear... (ibid.:49).

> Metalaxyl was also detected in low concentrations at the two least pristine potato farming control sites. Potential sources for this are aerial drift or application within the catchment for a non-potato use... (ibid.:48).

> The presence of oxychlordane, a metabolite of the banned organochlorine chlordane, is likely to be a legacy of past use in the catchment... (ibid.:49).

> The source of tebuconazole in Middle Creek is unknown, though given it can be administered via spraying, there is some potential for aerial drift into the catchment... (ibid.).

> The product can be applied through boom or aerial spraying, which could have resulted in aerial drift from a neighbouring catchment into Middle Creek. Alternatively, there is potential for simazine to be transported via groundwater. The process of groundwater movement is generally quite slow, often resulting in long lag times of movement following application. When in groundwater, the half-life of simazine is increased and can be in the order of years (Comber 1999). The source of simazine in Middle Creek requires further investigation (ibid.).

> Nickel was also found to be elevated at several sites in the potato farming study area, particularly at the impact sites, however it is not considered to have a high toxicity. The exact source for nickel is unknown, however it may be a natural occurrence. The ISQG guideline for nickel is considered conservative, with samples across the state often exceeding the trigger values (CAPIM, unpublished data). Similarly, the source for isolated exceedences of cadmium, chromium and antimony is unknown, however these are considered to be of low concern (ibid.:50).

Of low concern? I beg to differ:

Nickel toxicity: "Nickel (Ni)is a nasty toxic metal and a known carcinogen. It is one of the metals we see most commonly in toxicity tests. It appears stuck onto DNA, stuck on to translocator protein and is often present in blood at high levels. Nickel is a problem because it "looks" like zinc..." (drmyhill.co.uk 2012).

Cadmium toxicity: "Cadmium and its compounds are highly toxic and exposure to this metal is known to cause cancer and targets the body's cardiovascular, renal, gastrointestinal, neurological, reproductive, and respiratory systems" (www.osha.gov, No date).

Chromium toxicity: "Major factors governing the toxicity of chromium compounds are oxidation state and solubility. Cr(VI) compounds, which are powerful oxidizing agents and thus tend to be irritating and corrosive, appear to be much more toxic systemically than Cr(III) compounds, given similar amounts and solubilities. Although mechanisms of biological interaction are uncertain, this variation in toxicity may be related to the ease with which Cr(VI) can pass through cell membranes and its subsequent intracellular reduction to reactive intermediates" (http://www.atsdr.cdc.gov/ 2008). Cr(VI) was the subject of the movie Erin Brokovich.

Antimony toxicity: "Antimony potassium tartrate... Very hazardous in case of ingestion. Hazardous in case of skin contact (irritant), of eye contact (irritant), of inhalation. Slightly hazardous in case of skin contact (permeator). Severe over-exposure can result in death" (ScienceLab.com 2013).

Also: "Industrial chemical and pesticide. Has been used as an anti-parasitic drug... The most toxic trivalent antimony compound. A potent emetic. Ingestion of 0.2 g has been reported to be fatal (Miller, 1982)..." (inchem.org, No date)

6.2 CHEMICAL MIGRATION INTO WATER PIPES

And, further to the above-listed damage to the environment and human health: Pesticides can migrate through plastic water piping (http://www.health.qld.gov.au/ph/documents/ehu/15078.pdf; see: Endnote #4). Pesticides can infiltrate metal joints in water pipes (as petrol does when it leaks from underground storage at petrol stations, contaminating nearby water pipes in residences), and often can be transported into residential living spaces via water vapour moving in from external locations through the micro-pores and fractures in residential concrete slabs:

> Baroghel-Bouny (1994) among others showed that water transport occurs in porous cementitious materials through different modes: vapor diffusion, liquid water and air pressure driven transports (Lamour, Haouas & Moranville 2004).

6.3 CHEMICAL MIGRATION INTO & THROUGH BUILDINGS

Further:

> If you understand that residential concrete is very porous and will draw water from all surrounding areas as well as from below the slab. If this migrating water or moisture passes through any chemicals it will be carried up in to the home to be evaporated into the air (Source: Nelson, C. 2004, Email from admin@concretesealers.com).

It is literally a matter of water vapor picking up the pesticide and then diffusing through the slab into the living space of the residence (house, unit or villa) above the slab.

Note also McGrath (2000) who shows that large amounts of water can move through concrete (even apparently dry concrete) in a vapor, gaseous or dissolved ion state (in any direction, depending on flow direction dynamics set up by cooling and heating cycles) from a region of high concentration or high chemical potential through to low concentration or low chemical potential via diffusion. McGrath clearly shows that concrete cannot keep out any chemical contaminant unless it is specially treated:

> On the largest scale water or chemicals may move through cracks, rock pockets, construction joints and other large defects or joints in the concrete structure. This scale of flow is of primary importance with respect to "waterproofing" and involves keeping water out or in... (McGrath 2000).

It is therefore clear that chemicals can be transported through concrete in either a liquid or vapor form.

The back section of our current House is on a concrete slab and will be available to any chemical applied nearby (and, note too, that "nearby" becomes much farther away when even the minutest amounts of chemicals load a chemical sensitive individual with what he 'needs' to go into toxic shock). Ultimately the perpetual dangers of pesticide migration and the subsequent contamination of structures and pipes clearly shows that herbicide applications demonstrate a clear lack of immediate and long-term worth (acute poisoning, longer-term and cumulative poisoning, potential toxic shock, and disastrous epigenetic implications for future generations), are inherently wasteful and represent dangerously obscene, short-term technological fix weed eradication concepts working unsustainably against critical long-term soil health and human health and reproductive imperatives.

7.0 HERBICIDE RESISTANT WEEDS

Herbicide-resistant weeds are on the rise. There are at least 6 glyphosate resistant weeds in Australia now (Annual Ryegrass, Barnyard Grass, Fleabane, Great Brome, Liverseed Grass, & Windmill Grass [Source: http://glyphosateresistance.org.au/GRARG%20Register.pdf]), and well over a dozen in the US. Note that: "nearly half (49%) of all US farmers said they had "glyphosate resistant weeds" on their farms in 2012..." (Source: http://www.news24.com/Green/News/US-superweeds-epidemic-implicates-GMOs-20140113).

However, the above notes may be inaccurate:

> No-Till Farmer, May 2012 reported, "..at least 21 varieties of glyphosate-resistant weeds have been identified in the U.S." and "Between 2005 and 2010, the resistance problem mushroomed, with some Midwestern states reporting millions of acres of glyphosate-resistant weeds, mostly marestail and waterhemp." Worldwide the concern is greater with 357 biotypes and 197 species of weeds now reported resistant to glyphosate. (http://www.weedscience.org/In.asp) (Andersen 2013)

8.0 MEGA-PROBLEMS (INCLUDING PESTICIDE TOTAL TOXICITY), REFRAMING FORESTRY & ALTERNATIVE WEED ERADICATION METHODS

8.1 FIRST, A PRIME EXAMPLE OF WHAT REALLY NEEDS TO BE ERADICATED: GLYPHOSATE HERBICIDES' TOXICITY, PERSISTENCE & MOBILITY

8.1.1 CHEMICAL TOXICITY & PANDEMICS

Alternatives to toxic herbicides need to be found in order to reduce poisoning, injury, suffering and debility, and legal nightmares that ventilate all manner of legal and judicial unethical tactics, discrimination, and corruption.

Further, the herbicide-mediated destruction of critical soil reserves (and, ultimately, crop productivity) worldwide is a trend leading into famine scenarios.

Note that Roundup and other herbicides also kill off desirable microbial populations while perversely enhancing the reproductivity of pathogenic microbial populations in soil. Critically:

...the actual "kill" mechanism of the "herbicide" glyphosate, the active ingredient in RoundUp, comes from soil borne pathogens promoted by glyphosate after killing the beneficial microbial competitors and weakening the plant's immune system (Andersen 2013; quote source: http://cabecahealth.com/wp-content/uploads/2013/05/FoodPlaguePrimer.pdf; accessed: 25 Jan. 2014). See Endnote #6.

Also:

...evidence began to emerge in the 1980s that "what glyphosate does is, essentially, give a plant AIDS." Just like AIDS, which cripples a human's immune system, glyphosate makes plants unable to mount a defense against pathogens in the soil. Without its defense mechanisms functioning, the plants succumb to pathogens in the soil and die. Furthermore, glyphosate has an impact on microorganisms in the soil, helping some and hurting others. This is potentially problematic for farmers, as the last thing one would want is a buildup of pathogens in the soil where they grow crops.

...Huber says these facts about glyphosate are very well known scientifically but rarely cited. When asked why, he replied that it would be harder for a company to get glyphosate approved for widespread use if it were known that the product could increase the severity of diseases on normal crop plants as well as the weeds it was intended to kill. Here in the U.S., many academic journals are not even interested in publishing studies that suggest this about glyphosate...

If Huber's claims are true, then it follows that there must be problems with disease in crops where glyphosate is used. Huber's second letter verifies this, saying, "we are experiencing a large number of problems in production agriculture in the U.S. that appear to be intensified and sometimes directly related to genetically engineered (GMO) crops, and/or the products they were engineered to tolerate -- especially those related to glyphosate (the active chemical in RoundupÆ herbicide and generic versions of this herbicide)."

He continues, saying, "We have witnessed a deterioration in the plant health of corn,
soybean, wheat and other crops recently with unexplained epidemics of sudden death
syndrome of soybean (SDS), Goss' wilt of corn, and take-all of small grain crops the
last two years. At the same time, there has been an increasing frequency of previously
unexplained animal (cattle, pig, horse, poultry) infertility and [miscarriages].
These situations are threatening the economic viability of both crop and animal
producers (Richardson 2011 [I heavily recommend reading this article]).

And, more generally:

Glyphosate, the most widely used herbicide, is destroying human and animal health as a
result of disruption of gut bacteria. Two key problems caused by glyphosate in the
diet are nutritional deficiencies, especially minerals and essential amino-acids, and
systemic toxicity...

An increase in the incidence of Type 2 diabetes, obesity and autism has been reported
in Scotland. Similar increases have been seen globally. The herbicide glyphosate was
introduced in 1974 and its use is accelerating. The manufacturers claim it to be
safe, but none of the Regulatory Agencies are monitoring glyphosate levels in
groundwater. By courtesy of independent researchers around the world we present
evidence that glyphosate interferes with many metabolic processes in plants, animals
and humans, and glyphosate residues have been found in all three. Glyphosate is an
endocrine-disruptor (as are many herbicides) it damages DNA and it is a driver of
mutations that lead to cancer. We present graphs from the US which correlate
glyphosate application and the percentage of GE soy and corn crops to the incidence
and prevalence of various diseases in those on a Western diet. The Pearson's
correlation coefficients are very strong and highly significant for obesity, diabetes,
autism, thyroid cancer, liver cancer, deaths from Parkinson's, Senile Dementia and
Alzheimer's, inflammatory bowel disease and acute kidney failure. We present Cancer
Research UK graphs of upward trends in cancer incidences

between 1975 and 2009, which
are in line with the US graphs. Other consequences are gastrointestinal disorders,
heart disease, depression, infertility, birth defects and other cancers (Mason
2013:2,1).

Further to this issue of cancer in the journal article titled "Cytotoxic and DNA-damaging properties of glyphosate and Roundup in human-derived buccal epithelial cells":

Comparisons with results of earlier studies with lymphocytes and cells from internal
organs indicate that epithelial cells are more susceptible to the cytotoxic and DNA-
damaging properties of the herbicide and its formulation. Since we found genotoxic
effects after short exposure to concentrations that correspond to a 450-fold dilution
of spraying used in agriculture, our findings indicate that inhalation may cause DNA
damage in exposed individuals (Koller, F¸rhacker, Nersesyan, MiöÌk, Eisenbauer &
Knasmueller 2012:805-813).

This clearly shows that concepts/regulations/laws/protocols that posit or hypothesize safety for human health below a specific concentration for ANY orthodox pesticide/herbicide/synthetic chemical are patently INCOMPETENT. Roundup is advanced by Monsanto as being very safe. Monsanto even described Roundup as being as safe as salt, however: "In 1996 New York State's Attorney General sued Monsanto for describing Roundup as "environmentally friendly" and "safe as table salt." Monsanto, while not admitting any wrongdoing, agreed to stop using the terms for promotional purposes and paid New York state $250,000 to settle the suit" (Graves 2011; see:http://big.assets.huffingtonpost.com/fraud.pdf). And yet in extremely diluted form, as shown above, Roundup has been found to clearly NOT be safe.

This new appreciation of the likely levels of morbidity that could and do occur with exposure (note that you generally get sick on a continuum before you die, so death is always a possibility after initial poisoning) that was FORMERLY classified as "safe" does not even begin to address:

ï multiple individual exposures to different chemicals (additive effects),
ï exposures occurring over extended time,
ï synergistic effects within those multiple exposures, over time (greater than the
sum of the individual exposure effects),
ï a second substance increasing an effect generated through a first exposure
substance (a bit like an enzyme), but not causal itself (Note:

"Unfortunately, few
chemicals have been tested to determine if interactions occur with other chemicals"
[HESIS 2008]),
ï Tiny exposures adversely affecting those with MCS.
ï Genetic AND epigentic effects from exposure

On the last point, note:

> In vitro, animal, and human investigations have identified several classes of pesticides that modify epigenetic marks, including endocrine disruptors, persistent organic pollutants, arsenic, several herbicides and insecticides. Several investigations have examined the effects of environmental exposures and epigenetic markers, and identified toxicants that modify epigenetic states. These modifications are similar to the ones found in pathological tissue samples (Collotta, Bertazzi & Bollati 2013).
>
> There were significant increases in the incidence of total diseases in animals from pesticide lineage F1 and F3 generation animals. Pubertal abnormalities, testis disease, and ovarian disease (primordial follicle loss and polycystic ovarian disease) were increased in F3 generation animals. Analysis of the pesticide lineage F3 generation sperm epigenome identified 363 differential DNA methylation regions (DMR) termed epimutations. Observations demonstrate that a pesticide mixture (permethrin and DEET) can promote epigenetic transgenerational inheritance of adult onset disease and potential sperm epigenetic biomarkers for ancestral environmental exposures (Manikkam, Tracey, Guerrero-Bosagna & Skinner 2012).

Our conflictual pursuit of profit at any unexamined cost has left unfathomable damage in its wake. And the new toxicology is helping to devastatingly reveal how utterly vulnerable we are to the least amounts of synthetic chemicals we splash around. What we now know is that WE ARE ALWAYS POISONING OURSELVES AND OUR CHILDREN WITH THE CHEMICALS WE USE. What the following quote shows is that we now cannot stop poisoning future generations and that continually unfolding incidences of adult onset Russian Roulette disease will tragically appear without warning in lives that may not have sustained specific and notably heavy toxic exposures within their experience:

Environmental factors during fetal development can induce a permanent epigenetic change in the germ line (sperm) that then transmits epigenetic transgenerational inheritance of adult-onset disease in the absence of any subsequent exposure (Manikkam, Guerrero-Bosagna, Tracey, Haque & Skinner 2012).

Back to glyphosate generally:

Glyphosate, the active ingredient in RoundupÆ, is the most popular herbicide used worldwide. The industry asserts it is minimally toxic to humans, but here we argue otherwise. Residues are found in the main foods of the Western diet, comprised primarily of sugar, corn, soy and wheat. Glyphosate's inhibition of cytochrome P450 (CYP) enzymes is an overlooked component of its toxicity to mammals. CYP enzymes play crucial roles in biology, one of which is to detoxify xenobiotics. Thus, glyphosate enhances the damaging effects of other food borne chemical residues and environmental toxins. Negative impact on the body is insidious and manifests slowly over time as inflammation damages cellular systems throughout the body (Samsel & Seneff 2013).

Trees engineered to resist glyphosate-based herbicides (e.g. RoundUp) also pose a threat. Charles Benbrook found use of glyphosate-resistant crops resulting in 300-600% increases in the use of the herbicide. Studies in Oregon found that glyphosate exposure significantly increased the risk of late term spontaneous abortions and De Roos and other authors found an association between glyphosate use and the cancers non-Hodgkins lymphoma and multiple myeloma.

RoundUp is known to persist for up to 360 days in some ecosystems, and is commonly found as a contaminant in rivers. Additionally, studies have found that inhaling RoundUp is much more dangerous than ingesting it orally. RoundUp is commonly sprayed from the air where it can drift into nearby communities (Global Justice Ecology Project, et. al. No date).

Rampaging immune dysfunction in humans is a silent pandemic. But that story is only the tip of the iceberg. Crops and plantations that have not been sprayed or which have not been sprayed for a significant period are not exempt from glyphosate and other pesticide contamination arising from other locations. These are points of origin for herbicide drift and new disease outbreaks which could generate, over time, cumulative SATELLITE herbicide dynamics, including immune function retardation, leading to either quick satellite infection or satellite threshold breaches and consequent individual and local disease outbreaks. Note:

> There are fundamental differences in the way chemical pesticides are used by the Australian plantation industry compared to agriculture. Use in plantations is usually confined to the first two years of a plantation crop cycle (for example a 10-year crop cycle for pulpwood or a 30-year crop cycle for softwood sawlogs); for the rest of the life of the plantation pesticide application is very limited and generally only occurs in reaction to pest or disease outbreaks (Jenkin & Tomkins 2006).

I believe that the "only occurs in reaction to pest or disease outbreaks" (ibid.) pesticide application dynamic will become more and more common as the general ecological strata of the planetary Web of Life achieves more damage and destabilization. Plant, animal, fungal and human disease outbreaks will increase, which will then see quick and heavy emergency appeals to mass medication (e.g. vaccination) and pesticide fixes, but these responses will only further retard overall global lifeform immune function. This represents an accelerating and broad 'nuclear explosion' of chemical interventions as authorities are called in to respond and treat more and more disease outbreaks with the same mentality that created them. As such, the chemical interventions are based on old and patently wrong notions that drugs/chemicals and modern medical care have improved human life expectancy:

> In all, 86 per cent of the increased life expectancy was due to decreases in infectious diseases. And the bulk of the decline in infectious disease deaths occurred prior to the age of antibiotics. Less than 4 per cent of the total improvement in life expectancy since 1700s can be credited to twentieth-century advances in medical care (Garrett 2001).

My very great concern here is that human, animal and plant immune dysfunction occurring now, EVERYWHERE on the back of industrial pollution and GMO contamination, has established a global web of ecological destabilization and infection susceptibility, leading to what is now unavoidable: massive, ocean-jumping inflammatory

pandemic certainties. Note:

> ...the globalization of trade has substantially expanded markets for industrial pollution" (Davis & Stainthorpe 2002:65).
>
> ...author Laurie Garrett discusses the outbreak of Bolivian Hemorrhagic Fever in Machupo, as mice were discovered to be the transmitters of the disease. Garrett points out, however, that the infrastructure of the area, decimated by industrialization, played an important role in the increase in the mice population..." (BookRags.com 2014a)
>
> In the Preface, Johnathan Mann of the Harvard School of Public Health discusses how our time in history will be tracked by newly emerging epidemics, such as the human immunodeficiency virus. The vulnerability of the world is increased due to modern travel, huge populations, trading of goods and services, and simply the penetration of modern society into even the most remote areas of the world (BookRags.com 2014b).

The "filoviruses":

> It is the human slate-wiper, the invisible ultimate death, the filovirus named Ebola...
>
> It leaves one to think that Mother Nature will have her revenge on those who make a mockery of her... perhaps the human race, as well, which is destroying the very loins that gave birth to us, the African rain forest.
>
> Are Ebola, and the other filoviruses, antibodies against the "human virus" that is swiftly and thoughtlessly destroying Mother Earth? Are these viruses the "check" on the human K-species that we have been expecting?
>
> Ebola is a deadly virus to humans and primates, and its origin has yet to be uncovered. There is no cure for any of the Ebola sisters: Ebola Zaire, Ebola Sudan, Marburg, and the most recent Ebola Reston because of their mutation ability. As for there being a solution to the problem, it may lay in the reduction in human interference in nature and destruction of our own universe or perhaps the end of the

species that has become such a nuisance to Nature. Scientists, perhaps, should make
developers and loggers aware of such consequences, before its too late (Preston 1992).

These monstrous, acute pandemic scenarios go way beyond the scale of the 'silent' epidemics that are already horribly resident:

Pesticide exposures seem to give rise to Parkinson's (REHN #635) - a horrible
degenerative disease of the nervous system. Pesticide exposures diminish children's
memory, physical stamina, coordination, and [the] ability to carry out simple tasks
like drawing a stick figure of a human being. (See REHN #648.) Pesticide exposures
seem to make children more aggressive. Pesticide exposures seem to contribute to the
epidemic of attention deficit hyperactivity disorder ADHD) that has swept through U.S.
children in recent years. (See REHN #678.) (Montague 2001)

Additionally:

Indeed, according to Dr. Seneff, glyphosate is possibly "the most important factor in
the development of multiple chronic diseases and conditions that have become prevalent
in Westernized societies,"including but not limited to:
Autism
Allergies
Cancer
Parkinson's disease
Cardiovascular disease
Infertility
Multiple sclerosis
Obesity
Depression
Alzheimer's disease
Gastrointestinal diseases such as inflammatory bowel disease, chronic diarrhea,
colitis and Crohn's disease
ALS, and more

The rate of autism has risen so quickly, there can be no doubt that it has an
environmental cause. Our genes simply cannot mutate fast enough to account for the
rapid rise we're now seeing. The latest statistics released by the CDC on March 20
show that 1 in 50 children in the US now fall within the autism spectrum2,3, with a
5:1 boy to girl ratio. Just last year [2013] the CDC reported a rate of 1 in 88,

which represented a 23 percent increase since 2010, and 78 percent since 2007.
Meanwhile, I remember when the incidence of autism in the US was only 1 in 100,000ó
just short of 30 years ago! (Mercola 2013)

And, if there was another classification available in terms of "pandemic", then it would have to be this:

...In a breakthrough moment of truth for the CDC, the agency now openly admits that
prescription antibiotics have led to a catastrophic rise in superbugs, causing the
death of at least 23,000 Americans each year (an estimate even the CDC calls
"conservative").

This is the conclusion of the CDC's new Threat Report 2013
[http://www.cdc.gov/drugresistance/threat-report-2013/], a document that for the first
time quantifies the number of fatalities happening in America due to antibiotic-
resistant superbugs.

What's truly astonishing about this report is that it admits, in effect, that modern
medicine is a failure when it comes to infectious disease. The whole approach of
fighting bugs with isolated chemicals was doomed to fail from the start, of course,
since Mother Nature adapts to chemical threats far more quickly than drug companies
can roll out new chemicals...

...due to the disastrous failure of antibiotics combined with the widespread
suppression of human immune function (due to drugs, heavy metals, environmental
chemicals and more), superbug deaths will quickly accelerate, reaching 100,000 deaths
per year by 2020, nearly rivaling the number of Americans already killed each year by
FDA-approved prescription medications (Adams 2013).

And, what happens when superbugs are already resident in the hospital that you need to visit?

"To reiterate," says Brad Spellberg of the Infectious Diseases Society of America,
"these people come into the hospital for a heart attack, or cancer, or trauma after a
car accident, or to have elective surgery, or with some other medical problem and then
ended up dying of infection that they picked up in the

hospital. Ö The number of
people who die from hospital-acquired infections is unquestionably much higher now,
and is almost certainly more than 100,000 per year in the United States alone" (Buhner
2012).

It is as if we are being purposefully set up for the PERFECT (plant/animal/human) disease STORM, worldwide. And the endless analyses/studies and justification for the continued use of toxic medications (instead of herbal alternatives) and toxic pesticides (instead of non-toxic alternatives) goes on, and on, and on.

We are literally "monitoring our own extinction" (Prof. Stuart Hill [University of Western Sydney], 1999, pers. comm.).

8.1.2 CHEMICAL PERSISTENCE & MOBILITY

Note the literature on glyphosate persistence and mobility:

> The experimental findings, combined with transport studies on other strongly sorbing
> pesticides in the literature, support the hypothesis that transport of glyphosate may
> be caused by an interaction of high rainfall events shortly after application on wet
> soils showing the presence of preferential flow paths (Vereecken 2005).

And:

> ...glyphosate leaching seems mainly determined by soil structure and rainfall.
> Limited leaching has been observed in non-structured sandy soils, while subsurface
> leaching to drainage systems was observed in a structured soil with preferential flow
> in macropores, but only when high rainfall followed glyphosate application (Borggaard
> & Gimsing 2008).

And:

> ...urban populations are more at risk from [glyphosate] run-off from roads and from
> spraying of noxious weeds in, or close to, streams (Mason 2013:22).

And:

> This is one of the few works related to the analysis of glyphosate in real groundwater
> samples and the presented data confirm that, although it has

low mobility in soils,
glyphosate is capable of reaching groundwater (Sanchis, et. al. 2012).

And:

We conclude that phosphate application can cause system pH change with various extents
in the soil, which subsequently contribute to glyphosate mobility in different degree
(Zhao, et. al. 2009).

And:

Weekly air particle and rain samples were collected during two growing seasons in
agricultural areas in Mississippi and Iowa. Rain was also collected in Indiana. The
frequency of glyphosate detection ranged from 60 to 100 percent in both air and rain.
"According to the report, as linked on the website Green Med Info:

"The frequency of detection and median and maximum concentrations of
glyphosate in air were similar or greater to those of the other high-use
herbicides observed in the Mississippi River basin, whereas its concentration
in rain was greater than the other herbicides" (Disponible en EspaÒol 2011).

And:

There is limited experimental evidence of either root to root transfer or true soil
residual uptake of glyphosate. It is assumed that all cases of potato seed
contamination with glyphosate are due to foliar uptake in the mother crop.
ï Contamination of the mother stock may be due to:
* Spray-tank or -line contamination with glyphosate due to poor washing out.
* Drift from use in neighbouring crops or other vegetation (Agriculture and
Horticulture Development Board 2008).

And:

ALTON, Iowa ó The puny, yellow corn stalks stand like weary sentries on one boundary
of Dennis Von Arb's field here.

On a windy day this spring, his neighbor sprayed glyphosate

on his fields, and some of
the herbicide blew onto Mr. Von Arb's conventionally grown corn, killing the first few
rows.

He's more concerned, though, about the soil. During heavy rains in the summer, the
runoff from his neighbor's farm soaked his fields with glyphosate-laden water (Strom
2013).

And:

Recent studies have cast important questions over the extent to which glyphosate is
immobile in soil. One such study has shown that glyphosate can readily desorb from
soil particles in some soil types and can be highly mobile in the soil environment"
(Buffin & Jewell 2001:15-16).

And:

The use of glyphosate in forestry and agriculture has indirect harmful effects on
birds and small mammals by damaging their food supplies and habitat... Roundup
containing POEA is lethal to the tadpoles of three species of tree and ground frogs in
Australia. The Australian government has banned the use of these products near
water... Sub-lethal doses of glyphosate from spray-drift damages wildflower
communities and can affect some species up to 20 metres away from the sprayer... The
use of glyphosate in arable areas causes dieback in hedgerow trees... Glyphosate
residues were found in lettuce, carrot and barley when they were planted a year after
glyphosate was applied... In the UK, levels of glyphosate above the EU limit have
been detected by the Welsh Water Company every year since 1993. The Drinking Water
Inspectorate recommends that glyphosate be monitored, particularly in areas where it
is used by local authorities on hard surfaces...

In the field, long persistence of glyphosate has been observed in a number of
studies. AMPA has been found to be even more persistent than glyphosate, with a half
life in soil between 119 and 958 days7. In water, glyphosate has a
long persistence in sediments. Records of glyphosate

persistence include47:

- 249 days on Finnish agricultural soils.
- between 259 and 296 days on eight Finnish forestry sites.
- between one and three years on 11 Swedish forestry sites.
- 335 days on a Canadian forestry site.
- 360 days on three Canadian forestry sites.
- two Canadian studies found glyphosate persisted 12 to 60 days in pond water following direct application
- glyphosate residues in pond sediment were found 400 days after direct application with the formulation Accord
- glyphosate was found to persist for more than one year in studies of pond sediments in the US
- studies in Norway have detected glyphosate in surface and ground waters48 (ibid.:1-2;15-16).

And:

> Glyphosate... Persists and accumulates in soils and plants with a half-life reported to be 22.5 years"(Advanced Biological Concepts, No date).

And:

> In Hawaiian sugarcane soils, glyphosate was broken down by half in times varying from 18 days to 22.8 years (54) (Julius 2002:7).

The PERSISTENCE of glyphosate (and its consequent buildup over repeated sprayings) is supported:

> Glyphosate has a reputation of being nontoxic to animals and rapidly inactivated in soils. However, recent evidence has cast doubts on its safety. Glyphosate may be retained and transported in soils, and there may be cascading effects on nontarget organisms. These processes may be especially detrimental in northern ecosystems because they are characterized by long biologically inactive winters and short growing seasons...
>
> ...studies on herbicide residues in boreal environments have demonstrated that glyphosate and the main metabolite of glyphosate degradation, 2-amino-3-(5-methyl-3-oxo-1,2-oxazol-4-yl)propanoic acid (AMPA), can be traced from soils even years after the last spraying [15,17,18]...

> ...the effects on nontarget organisms are likely to be more pronounced and long
> lasting in northern ecosystems because of increasing use of herbicides in forestry and
> agriculture, as well as the cold climate comprising a challenge to glyphosate
> degradation in the soil. The global issues are analogous to those of excessive use of
> antibiotics: we must avoid the loss of the long-term efficacy of the world's most
> important herbicide (Helander, Saloniemi & Saikkonen 2012:1-2, 5).

Note that this issue will automatically result in a gradual buildup of glyphosate and AMPA over the years. It appears that a "tipping point" or threshold will eventually be breached in treated soils, thus bringing about the stated problems according to Prof. Huber above. And while low volume and concentration applications of glyphosate product might not immediately generate overt and measurable soil microbial issues, a gradual buildup or an undiluted spill of herbicide could do MUCH more:

> ...a high concentration of glyphosate (100 x field rate) simulating an undiluted
> chemical spill substantially altered the bacterial community in both soils. Increases
> in total bacteria, culturable bacteria, and bacterial:fungal biomass were rapid
> following application. Culturable bacteria increased from about 1% of the total
> population in untreated soil to as much as 25% at the high concentration by day 7,
> indicating enrichment of generalist bacteria. Community composition in both soils
> shifted from fungal dominance to an equal ratio of bacteria to fungi. Functional
> diversity of culturable bacteria, estimated by C substrate utilization, also increased
> at the high glyphosate concentration... Apparently the herbicide resulted in an
> across-the-board stimulation of bacteria... (Ratcliff, Busse & Shestak 2005).

What must be ELIMINATED now is "the destructive and water-poisoning monoculture plantations that have caused so much damage to the water table, to water supplies, and to public health already" (Bound, Biggs & Obendorf 2012).

What is NEEDED now is "Forestry reform that acknowledges and values bio-diverse regeneration forestry plantations, that mimic the distribution and ecology of native forests and that not rely on toxic chemicals for their health and growth... The ENGOs must... rule out monocultures. That is basic" (ibid.).

Further:

> There is a place for replanting bio-diverse regeneration native forests that seek as far as is possible to restore and grow healthy forests approaching their original conformation. This type of forestry is an entirely different kettle of fish to the chemically dependent monoculture plantations of trees that develop poisonous leaves and are bred to be pulped. Bio-diverse regeneration forests are self-regulatory but they are not considered the foundation of a sustainable timber industry because:
>
> > Providing companion plantings that Ö deter pests, plus a tolerance of a low level of pests, were all part of a tried-and-true method of control that long predated the war on nature. The trouble was that corporations couldnít make money from these approaches. With the illusion of a quick and permanent fix, the pesticide companies had set us on a cataclysmic course.9
>
> In other words, giant corporations are determined to make money regardless of the social and ecological costs. Put this with Mike Bolanís above exposure of the pulp and paper industry [see: http://tasmaniantimes.com/index.php/article/clean-water-needs-revised-forestry-operations] and we see the explanation for Tasmaniaís water problems (ibid.).

8.1.3 OTHER HERBICIDES: PESTICIDE TOXICITY, MOBILITY & CONTAMINATION

And, what of the toxicity and mobility of herbicides that do not contain glyphosate? (Due to constraints, this section is heavily abbreviated.)

Note the following:

> Sulfometuron has long soil residual activity and may move off-site in wind-blown soils (UC Davis Weed Research and Information Center 2013).

Sulfometuron appears to be similar to glyphosate in terms of its residual nature, at the very least.

Sulfometuron related herbicides are: Broadstrike, Chlorsulfuron,

Crusader, Eclipse, Ethoxysulfuron, Express, Flame, Harmony M, Imazapyr, Intervix, Iodosulfuron 100, Iodosulfuron 50, Lightning, Logran 750, Londax, Mesosulfuron 30, Metsulfuron-methyl, Monza, Muster, OnDuty, Raptor WG 700, Sempra, Spinnaker, Sulfometuron, Titus, Trifloxysulfuron (HerbiGuide, No date).

Note:

Sulfometuron methyl-containing herbicides cause eye discomfort, tearing, and blurred vision. In laboratory tests, sulfometuron methyl caused anemia, atrophied testicles and testicular lesions, and increased the incidence of fetal loss. A sulfometuron methyl breakdown product causes DNA damage in the colon of laboratory animals.

Because of limited monitoring, little is known about how often sulfometuron methyl contaminates rivers and streams. However, the U.S. Geological Survey found this herbicide in rivers in the Midwest, and the U.S. Forest Service found it in streams following forestry applications.

Enough sulfometuron methyl to kill desirable vegetation can persist in soil for a year after application.

Minute amounts of sulfonylurea herbicides disrupt plant reproduction. For example, sulfometuron methyl's chemical relative chlorsulfuron reduces fruit production in cherry trees. This reduction is caused by amounts equivalent to 1/1000 of the typical agricultural rate. Experiments with peas, canola, soybeans, and smartweed had similar results.

Drift from roadside and noxious weed applications of Oust have resulted in widespread crop damage totaling millions of dollars (Cox 2002).

These above-listed critical problems with Glyphosate and others not only indicate a slower moving pandemic of human morbidity, but they also specifically highlight the powerful potential for acute, threshold breaking pandemic scenarios, and leave us all with no excuse whatsoever for the continued use of herbicides!

We may well ask: "How can we move, as a global community, beyond the chemical devastation that is bearing down on us?" (http://www.mcs-international.org/, No date)

8.2 SECOND, PRIME EXAMPLES OF POTENTIAL IMPROVEMENTS/REPLACEMENTS FOR CURRENT DESTRUCTIVE PRACTICES WHILE THE BOUND, BIGGS & OBENDORF 2012 RECOMMENDATIONS (ABOVE) ARE EMBRACED

8.2.1 MULCH

Please note that the Mulch strategy listed below should be read in terms of the above section titled: 5.1.3.1 ENDOTOXIN BIOAEROSOLS.

First, if enough mulch is applied, weeds will be suppressed. In the case of pine plantations, site preparation might need to be refined (see below). Grass weeds might be mostly eliminated if an extensive mulching operation could then follow and be configured to tap into the pre plant stage (note the below listed possibilities in terms of Corn Gluten Meal [CGM]: trials might be needed to investigate this product's potential for pre-emergent weed suppression when mixed in with mulch or, likely more possible, its use as a post plant weed control). This might mean using the harvest rubbish to generate the mulch on-site when all the equipment and manpower is focused there. Note:

> Elders Forestry has piloted a system of taking harvest residues deposited at harvest landings after in field chip operations and mulching and re-distributing them across the site to provide a mulched layer which suppresses weed growth (Forest Stewardship Council, No date #1)

Hopefully this means the operation posits the most efficient and cost-effective strategy as well, and especially so if this substantial stage then eliminated the need for separate pre-emergent or post plant weed control (either aerial or manual). Not being an expert in this industry (which sometimes means that you are not restricted by limiting knowledge orthodoxies), I can only hypothesize what may or may not be effective. Note:

> Cultural Weed control
> Reduce chemical input at plantation establishment by:
> ñ Achieving rapid initial growth ñ reduces the time availability for weed species to become established
> ñ Good site preparation ñ good site preparation reduces weed growth, maximises the seedling opportunity to survive and grow, disadvantages existing weeds, and reduces the risk of poor planting technique
> ñ Planting espacement ñ close spacing reduces weed capacity to survive (Forest Stewardship Council, No date #2).

Note also:

Experimenting with polymer coated fertilisers that can be placed in the planting hole in direct contact with the root ball. Early indications are that this may lead to rapid initial growth and hence reduce the need for post plant weed control and browsing animal control (Forest Stewardship Council, No date #3).

What are the possibilities of including CGM as a fertlizer with the seedling root ball? It may suppress grass weeds while simultaneously stimulating seedling growth.

8.2.2 STEAM & FLAME

The deep penetration of steam into the soil profile is undesirable because this will result in the killing off of soil microbial populations. However, steam can kill off above-ground foliage.

In tests/trials: "Both steam and flame were more effective on certain erect-growing broadleaved weed species than on prostrate growing weeds and grasses... Cost estimates of propane use were $41 to 56 ha-1 and $26 ha-1 for the steam and flame treatments, respectively." (Shrestha, et. al., 2011). Given that grasses remain an issue with these treatments, an effective pre-emergent treatment appears essential before seedlings are planted.

Further: "The benefits of Thermal Weed control are numerous and vary from a competitive alternative to chemical use to the added benefit of providing organic farmers with a way to rid their crops of weeds without disturbing the soil thereby minimising erosion and water loss" (Source: http://www.batchen.com.au/thermal-weeding; accessed: 27 Jan. 2014).

8.2.3 CORN GLUTEN MEAL (CGM)

Note: "A little more than a decade ago, an Iowa State University researcher, Nick Christians, accidentally discovered the herbicidal properties of corn gluten meal. Corn gluten meal is a by-product of the milling of corn and was found to inhibit root growth and also contains 10% nitrogen by weight, thus making it an ideal naturally occurring "weed and feed" product... Among the weeds controlled with pre-emergent application[s] of corn gluten are crabgrass, dandelions, pigweed, and purslane to name only a few. Corn gluten meal is applied to the soil and affects the roots of germinating seeds. It does not affect established plants and therefore can be safely used in turf, ornamental, vegetable, and flower garden situations." (Link 1999).

To stop feeder weed roots from emerging, try spreading CGM in the same manner as a dry fertilizer (Wagner 2014). Corn gluten is available in granules, pellets or powder. Repeat: it will not kill

established weeds or plants (Francis 2014).

However, it should be observed that "...the nitrogen in CGM will benefit existing weeds as well as desirable plants. Therefore, inadequate weed removal prior to treatment can actually result in an increased weed problem" (Chalker-Scott, no date). Further: "CGM is not selective and can inhibit germination of desirable plant seeds as well as weeds... Other environmentally friendly weed-control treatments (such as sub-irrigation, mulch, or soil solarization) are cheaper and often more effective than CGM." (ibid.)

For excellent research on CGM, see: http://www.hort.iastate.edu/research/gluten.

8.2.4 KITCHEN RECIPES

A mixture of vinegar, salt and dish soap can kill already emerged weeds (Wagner 2014), and could potentially be used prior to planting. Vinegar alone "(Acetic acid) has been found to be (a) useful herbicide for broadleaf weeds and grasses. Generally the acetic acid content in vinegar is about 5% but a level of 10% is needed to treat most weeds" (Farmstyle, no date). A higher acetic acid content than is found in normal vinegar can be found in products available from farmer's stores (Beaulieu 2014).

8.2.5 ORGANIC HERBICIDES 1: OIL-BASED HERBICIDES

Note: Pine oil can be described as a mildly antiseptic phenolic disinfectant (Wikipedia 2014b). It is also "an essential oil obtained by the steam distillation of needles, twigs and cones from a variety of species of pine, particularly Pinus sylvestris" (ibid.).

Further: "Oil based Herbicides are based primarily on pine oil. These sprays remove the outer wax layer of the plant causing it to dehydrate. These sprays also reduce the viability of any weed seeds in the soil that are contacted by the spray. Some of these sprays are registered for use in organic farms" (Farmstyle, no date).

There are some health issues related to pine oil: it has a low corrosion level, but it is an irritant to the skin and mucous membranes and may elicit breathing problems or central nervous system depression (Wikipedia 2014a). Nevertheless, pine oil offers up potential in terms of a worthy, much more natural alternative to orthodox herbicides.

8.2.6 ORGANIC HERBICIDES 2: INCLUDING CLOVE, CINNAMON & COTTONSEED OIL

Note: "Organic herbicides are fast acting (15 minutes) when temperature is high (especially if humidity is low). The short

time-frame for effective kill means field workers can observe the effect of their actions without having to return to the field a week later (as with glyphosate)" (TMOrganics 2012). In quick summary, expense and the required high water volumes are disadvantages. Advantages are: safety for operators, and quick action and effect (ibid.).

8.2.7 ORGANIC HERBICIDES 3: BIOWEED PRE-EMERGENT, ORGANICALLY CERTIFIED & PLANT DERIVED HERBICIDE, & OTHERS

"BioWeed" appears to be a substantial and innovative product. See: http://www.certifiedorganics.info/prodbwcindex.html for details. Also available are: "Weed Zap" (with cloves and other ingredients), "Slasher" (a synthetic pelargonium oil), and "Yates Vinegar". (TMOrganics 2012)

8.2.8 STEAM ON STEROIDS

Steam treatment of weeds can be enhanced: "There is some encouraging evidence to support organic additives with steam, such as fish oil, vinegar, cloves, eucalypt, salt and pine oil to improve efficacy and increase systemic penetration" (J. Winer, Weedtechnics.com, Email, Jan. 2014). This approach to taking out weeds requires ground applications and ready water access. Weedtechnics is happy to "undertake trials and pilot programs" (ibid.) if your company has an interest.

8.2.9 AGRO-HOMEOPATHY

Homeopathy in agricultural settings can potentially reveal ways to bolster soil health and plant health. Note: "Important benefits of agrohomeopathy include economic savings and preservation of the natural ecology. Agro-homeopathy can reduce costs from agrochemicals, and it will not damage the organism, the ground under the plant or its surrounding area and the water that serves as the solvent in the dynamizations" (Moreno 2008).

See: http://hpathy.com/homeopathy-papers/agro-homeopathy-an-alternative-for-agriculture/;
http://homeopathyplus.com.au/agrohomeopathy-an-introduction-to-healing-plants-and-planet-with-homeopathy/;
http://earthhaven.ca/homeopathy-for-plants-c372.php;
http://www.narayana-publishers.com/Homeopathy-for-Farm-and-Garden/Vaikunthanath-Das-Kaviraj/b8241.

It would be a very intelligent company indeed that mastered the art of dealing with environmental health, human health, soil health, plant health and weeds (for none of these are SEPARATE ISSUES) in an entirely non-toxic and ethical fashion.

9.0 TRUE SCIENCE

GENUINE SUSTAINABILITY (rather than runaway herbicide use and irresponsible franken-GMOs framing exclusive, fascist and globalist delusions of food control and massive profits) is the name of the (future, inclusive, democratic and local) game NOW. Why not generously enhance the organic profile of the soil you plant in via excellent composting and mulch creation techniques? That is, build up the health of the soil and the robustness of the crop or plantation product you are developing rather than waging a chemical war against weeds and, by extension, each other and the entire life support system that is this Planet?:

> Ecological agriculture is highly productive and is the only lasting solution to hunger
> and poverty... We need once more to feel at home on the earth and with each other
> (Navdanya, No date).

We cannot coexist with PESTICIDES and GMOs!

10.0 CONCLUSION

We carry a deadening weight with us from the Industrial Revolution, a dragging burden of toxic assumptions. Quick and impatient chemical and pharmaceutical "bullets" and alluring chemical/product features characteristically stampede our weak and unexamined innovations into our childrens' and grandchildren's DNA, brains, future fitness and whole potential. That weight has already, and will further, materialize and amplify as a host of fitful problems jumping frighteningly far ahead of us in time, scheduling a succession of nightmares. Our toxic future is already here, already framed, and we feel it now in our bones, brains, joints, sperm and inside our fractured and sick metabolisms.

If the battle against weeds, pests and assumed issues is only ever fought in a retaliatory or negative, shallow-dimensional technological fix sense, or a toxicologically ignorant sense, or inside a proud and hacked mental framework where we presumptuously assume the immortality of our place in the world, then the destruction of the future is certain. Soil composition and microbial health in agricultural settings will be degraded. This will lead to the consequent weakening and defilement of crop nutrition and health, the programing of disease in stock, the degrading and corruption of plantations and forest ecosystems, the overall devastation of global environmental health, and the more direct sickening of human health and reproduction. If we are only capable of dumbly appealing to toxic chemicals and GMO "foods" as a way forward, then we are not growing but rather waging WAR against

the NATURAL WORLD that frames all our best potentials. The only disappointing outcome possible for a global brute-techno ascendancy and stifling of living systems will be OUR CANCER-RIDDEN AND STERILE GREAT-GRANDCHILDREN. And then... NOTHING.

Our local error-prone, convenient (lazy) and careless 'thinking' reactions and, worse, GLOBAL ELITIST SCHEMES, are taking us on MAD (Mutually Assured Destruction) trajectories. We need to heavily examine those trajectories to see what manner of shiny yet deceitful beast they are, and to appreciate how to change them FOR THE SAKE OF OUR ONLY HOME, our children, and our grandchildren. Look into their little faces... We only get one chance, NOW... ONE WORLD, ONE AMAZING AND HORRIBLE HISTORY.

The loss of material (environmental and human health) potential to toxic chemicals and aberrant agricultural/plantation practices is much more than just an increased predisposition for cancers and eventual human extinction. Every single loss demonstrates a failure to make the right decisions and generate positive character. Every morbid illness of every poisoned person (http://poisonedpeople.com) is a reflection of destroyed character, the greatest loss humans can experience.

What stands in the way of the RIGHT to real life -- health and freedom -- are the black conscienceless spider eyes of the Biotech Giants.

All of ethical and moral motivation and understanding should work together to educate the world about the fatal dangers of bad science:

> We're fighting for our right to live! (Emmerich & Devlin 1996)

However, on the bright side, Big Biotech's Bad Boy Plan is not as big as the bigger POTENTIAL that sees positive human character spectacularly gleaned out of global adversity, character that -- by its very non-material disposition -- posits an infinitely greater future expression of transcendent possibilities. There are many that believe this hologram Earth and Universe feature as an infinitely complex staging ground for exponentially expanding creativity of a type this world has yet to witness, an infinity of expressive opportunity seeded inside of a great and largely unknown meta-purpose set for humanity way beyond the blindness and tragedy of a frustrating and disappointing material existence. Winston Churchill had it right:

> ...I will say that he must indeed have a blind soul who cannot see that some great
> purpose and design is being worked out here below... (Churchill 1941).

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ENDNOTES

1. The amazing power of Chemical Diffusion:

The objective of controlling the hydraulic conductivity is clearly one of limiting advective contaminant transport (ie the movement of contaminants with moving water) through the liner. However, despite more than a decade of research and the existence of good supporting field data, it is only recently that it has been generally recognized that there is a second contaminant transport process which will occur even through a very low hydraulic conductivity clay liner: that

process is chemical
diffusion. ...diffusion may be the dominant contaminant transport mechanism in a well-
constructed clay liner. Furthermore, contaminants can escape from a waste disposal
site, by diffusion through a liner, even if water flow in the liner is into the
landfill (Rowe,1994:219).

2. Note the article: "Monsanto's Bt Cotton Kills the Soil as Well as Farmers":

The soil, its fertility, and the organisms which maintain the fertility of soil are a
vital aspect of the environment, especially in the context of food and agricultural
production.

A recent scientific study carried out by Navdanya, compared the soil of fields where
Bt-cotton had been planted for 3 years with adjoining fields with non GMO cotton or
other crops. The region covered included Nagpur, Amravati and Wardha of Vidharbha
which accounts for highest GMO cotton planting in India, and the highest rate of
farmers suicides (4000 per year).

In 3 years, Bt-cotton has reduced the population of Actinomycetes by 17%.
Actinomycetes are vital for breaking down cellulose and creating humus.

Bacteria were reduced by 14%. The total microbial biomass was reduced by 8.9%.

Vital soil beneficial enzymes which make nutrients available to plants have also been
drastically reduced. Acid Phosphatase which contributes to uptake of phosphates was
reduced by 26.6%. Nitrogenase enzymes which help fix nitrogen were reduced by 22.6%.

At this rate, in a decade of planting with GM cotton, or any GM crop with Bt genes in
it, could lead to total destruction of soil organisms, leaving dead soil unable to
produce food.

The ISAAA in its recent release has stated that there are 7.6 mha of Bt-cotton in
India. This means 7.6 mha of dying soils (Global Research, i-sis.org.uk, 2009).

3. Note, in terms of a urine and water test for glyphosate:

We have found a USDA certified USA lab that is willing to test urine and water for glyphosate! Test will be offered to MAA [Moms Across America] supporters at a reduced rate from $145.00 each down to $90.00 each from now until Jan 31st 2014 due to the volumn expected. Moms Across America does not receive any financial gain from any transaction connected with this lab what so ever. We simply want Moms to be able to care for their families knowing all the infomation they can.

In addition to empowering families, we see this as a great opportunity nationally to further our cause of health and freedom in America. The EPA analyzes glyphosate again in 2014 and we want to weigh in on whether or not they approve it again. Your test supports our national cause as well.

Click here to follow the guidelines and get your water and/or urine test. http://www.momsacrossamerica.com/glyphosate_testing (Moms Across America 2013, Email).

4. How uncontaminated is your water?

In a report titled 'Permeation of potable water piping systems' prepared by an Ad Hoc Committee on Permeation convened by the US Plastic's Pipe Industry high levels of hydrocarbons (toluene, xylene, petroleum hydrocarbons) in soil have been reported to contaminate drinking water supplies. The report also details the results of testing undertaken that indicates that at 'high concentrations' of hydrocarbons permeation can occur through pipe material as well as through material used to join pipes. At 'low concentrations' of aromatic and chlorinated hydrocarbons permeation was found to be similar for high-density polyethylene (HDPE) and low density polyethylene (LDPE) pipes. Permeation is claimed to be related to the type of pipe, presence of joints and duration of exposure."(http://www.health.qld.gov.au/ph/documents/ehu/15078.pdf)

5. In the former Fraser National Park (now called the Lake Eildon National Park) at Eildon in Victoria, herbicide (likely a 2,4-D or 2,4,5-T form) was sprayed by employees randomly over a hillside in the early to mid-1970s in order to use up their quota so they could quickly go back to base for their "smoko". This was, to my knowledge, never officially documented. The park borders Eildon Lake, the water supply for the township of Eildon. Within a relatively short period of time from the date of this pesticide 'application' statistically significant related morbidity COULD have occurred within the town's population, which could be supported by a judicious investigation of the former Eildon Hospital's and then local doctors' records (e.g. Dr. Austin Tuohy, and others). On the other hand, if the pesticide, instead of being washed quickly into the Lake, made its way into the township's drinking water supply via the local geology, then morbid results in the townsfolk would likely have dissipated so broadly as to be indistinguishable from all other usual conditions. Nevertheless, toxicologists should be able to identify morbid TRENDS or slants on background morbidity.

6. The hidden Truth:

U.S. patent 7,771,736 issued August 10, 2010 was for glyphosate as an antimicrobial.
One group of beneficial microbes named in the patent directly killed by glyphosate is
the pseudomonas microbes. Pseudomonas soil bacteria are important phosphate
mobilizers and suppressors of fusarium pathogenic fungi. Pseudomonas and most
beneficial soil microbes additionally have an important function in making soil
minerals available for plant use...

...there is a two pronged mechanism occurring with glyphosate, trace mineral chelation
and pathogen proliferation. These mechanisms have extended consequence. Not only are
nutritive minerals directly chelated out of the system, but the proliferation of
pathogens effectively converts additional nutritive mineral to unusable form leading
to further nutrient deficiencies in growing crops. This process is occurring
throughout the entire food chain as glyphosate residue in food is becoming common.
Glyphosate is essentially "rusting away"the fabric of our soils leading to the
proliferation of disease pathogens and nutrient deficiencies throughout the food
chain. (Andersen 2013; actual quote source:
http://cabecahealth.com/wp-content/uploads/2013/05/FoodPlaguePrimer.pdf; accessed: 25
Jan. 2014).

Advancing nutrient deficiencies in soil treated with glyphosate will see crop and plantation yields inevitably decrease.

7. THE famous rat study:

A measure of how desperate the GM proponents are is the recent decision of the journal editor to retract a thoroughly peer-reviewed paper ñ the famous SÈralini study ñ published a year ago, basically because it found serious health impacts in rats fed GM maize and/or exposed to Roundup herbicide compared to controls. An open letter has been posted for signing to demand reinstating the paper and pledging to boycott the publisher unless and until that is done ([3] Open Letter on Retraction and Pledge to Boycott Elsevier, SiS 61). The letter has already attracted thousands of signatures from around the world. Please sign on and forward widely. We need to stop this unprecedented censorship on scientific knowledge and information crucial to public health and well-being (Ho 2014).

8. Wan & Li 1999b:172 were referencing Rylander, Persson, Goto, et al. 1992: 263-267.

9. Wan & Li 1999b:172 were referencing Rylander & Snella 1983: 332-344.

10. Koskinen et al. 1999 was referencing: Waegemaekers et al. 1989:192-198; Brunekreef et al. 1989:1363-1367; Dales et al. 1991:196-203; Dekker et al.1991: 922-926; Brunekreef 1992:79-89; Sprengler et al. 1994:72-82; Timonen et al. 1995:1155-1160.

11. Koskinen et al. 1999 was referencing: Martin et al., 1987:1125-1127, Platt et al. 1989:1673-1678, Waegemaekers et al. 1989:192-198, Dales et al. 1991:196-203, & Braback et al. 1995:487-493.

12. My unpublished PhD Thesis is titled:

The Universal Demand for Immortality
The Code of Everything inside Creation and Destruction

An Investigation of the Human Condition
of Fear, Conflict & Unconsciousness, of

Creators Who Destroy, Destroyers Who Create
& the Hidden Reality of Universal Secrets

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