

INDIGENOUS WELCOME &
ORCHARD FOOD - PRODUCTION EFFICIENCIES
GUIDELINES FOR OPERATING A FORESTED EARTH

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Continental INDIGENOUS (>Latin = 'Self-Generating') MULTILEVEL ORCHARD-TREE FOREST & field based Food Production & Governance.***
A DRAFT RESEARCH FRAMEWORK FOR BUILDING UPON UNDER-STANDINGS OF INDIGENOUS HERITAGE. www.indigenecommunity.info

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A. Multi-LEVEL ORCHARD FORESTS ***
FOOD SOURCES DETERMINE CIVILIZATION

We constantly renew our relationship with each other and to the earth through our food. Our vision of 'civilization' (derived from Latin 'civis' = 'people of the city') and the debate on ecology is based in a western worldview, which ennobles western field-dominant agriculture as the world's most advanced efficient system of food harvesting. While generalities aren't fair, contrary to the myths field/cereal croppers have engendered, Indigenous Peoples very often lived in great cities. Indigenous food is often deliberately harvested from a diversity of

Multi-level Orchard tree and field crops growing in often densely populated communities.

***Boreal forest and arctic communities require a separate ecological analysis.

Field/cereal croppers routinely cut down trees that get in the way of extended field-crops of cereal (wheat, barley, oats, rye etc.) grains and vegetables. Field-cropper protein comes from domestic animals fed cereal/grass, carbohydrates from cereal or root crops. Pioneers are proud to break land for crops, animals & human habitation. Yet analysis of comparative productivity, leads one to conclude that pioneers cut multi-level orchards from ignorance of multi-dimensional living resources and 3 - dimensional planning. One concludes that planning for living resources is beyond the mental capacity of the colonial militarised thinker.

All of our science, our school systems and every 'field-of-study' start with a foundation of field agriculture as the assumed backbone of our economic system. We consider ourselves at the peak of species evolution. Field-food production and the security it purportedly affords are considered the foundation for every blessing we receive. There is a production-reality feedback loop that is entirely missing in this colonial scheme of things.

MANIFEST DESTINY

The very notion of civilization as understood by western tradition is founded on the development of field agriculture in Babylonia, passing to the Middle-east, Egypt, to Greece, to Rome, to Europe. In the Americas, we study historical advance passing from Britain (North America), France (Quebec), Portugal (Brazil) and Spain (Latin America). Considering a whole world of historical influences, this select national inter-pretation of history or 'manifest destiny' represents a dominant world view by conquerors required by field / cereal cropping.

All of our calculations on food production, the blessing of industrialisation, energy use, medicine, transportation, democracy in the western sense, foreign policy, mainstream scientific pursuits, education and war are based in comparative advantages of our system supposedly gained through our advanced field agriculture and animal husbandry.

These advantages are considered strengths of our 'evolved' dominance, which supposedly bring the unity needed for world advancement. Without imposed unity, it is assumed that critical masses of people can not find the will to come together for their mutual benefit. A notion of justifiable force comes to permeate our social foundation.

At the same time civilization has pretensions of fair dealings, rule of law, kindness and gentile relations. Yet the contradiction of violence used to subject indigenous and other peoples is usually justified by the concept of economic efficiencies and the benefits accrued to everyone, so we continue to need to subjugate nature and citizens at every moment.

DISPLACING ORCHARD PEOPLES

As we break the land, indigenous peoples are driven off as well as plants and animals displaced. Cutting down the forest alters weather patterns and eliminates the water holding capacity of the land, air-humidity creating capacity of plants, stable soil-state of permanent tree and plant cover, solar absorbing capacity of the canopy, bounty and privacy creation of

forest space, food plentitude of tree products and other life, wind calming and climate moderating.

Destruction of nature's services leads field/cereal croppers to mechanical solutions of every sort for irrigation, respiratory difficulty, sun and rain shelter, clothing, health, enmity, irrigation, transport and energy, which in turn have had their own consequences.

The progressive subjugation and elimination of indigenous peoples starting 6,000 years ago, was a time of great change for earth's people. **Let's have a look at the way we think about this period, the period since, some basic scientific facts and our assumptions.**

6000 years ago Babylon was covered as were much of Persia, Israel, Egypt, North Africa, Greece, Italy, Europe and the America's with large orchard-tree forests. The indigenous people living in these forests enjoyed enormous reliable sustainable forest productivity of tree nuts, seeds, fruit, leaf-greens, animals, complementary low lying herbs, vegetables, berries, mushrooms, algae, fish, molluscs water and water plants.

Indigenous orchard tree forest productivity is legendary and still forms a key support of exogenous peoples ever since. We continually fail to supply our basic needs from our own exogenous resource productivity and rely on exploitive trade practices with an ever depleting Third World ecology harvested for our First world economic desires.

'SYLVALIZATIONS' (derived from the Latin 'Silva' meaning wood or forest)

Great ecological cities existed in indigenous orchard forests of Australia, Africa, Asia, South, Central and North America. Sylvalizations in harmony with nature and without garbage (artefact) production have existed over long periods of time invisible to present day archaeologists. When Columbus arrived in 1492, the Americas held the largest cities of the world. During Cortez' subjugation of Tenochtitlan the island city of Mexico City's 350,000 people, and 29 million in the Valley of Mexico, he describes the cleanliness of its water surrounds, ways and streets. Graphic systems of writing with Native and other indigenous peoples throughout the world have been buried under epidemics, burning of libraries and exogenous (> Latin = 'other-generated') expansion wars. Oral systems of historical recall, which complemented the written graphics and involved specialized story tellers with thousands of years of community history recall, have been lost through this social-degradation. In the nomadic suburban television generation of today, recall of appropriate family and community information reaches barely one generation (~30 years)

Field-crop dependent nation propaganda denigrates the indigenous period, as "savage" (derived from the Latin meaning 'People of the forest') or as a "Dark Age". What we know about this period is filtered through field-crop worldview that forest peoples were savage, brutal, primitive, half starving with unreliable food production based in the whims of nature.

COMPARATIVE PRODUCTIVITY

I owned a ten acre orchard during the 70's, worked in orchards and grown food for 34 years. I have worked in the Natural Food system, lived and worked with indigenous peoples over 37 years. Western Field and Cereal-based agriculture is unaware that it is ten

times, 10 x, 1000% less productive of proteins and carbohydrates and other food stuffs than **Orchard nut, seed, and fruit tree culture** heritage of millions of years and still honoured by Indigenous Nations. If one considers the other food, housing, clothing, animal, warmth and health material production from the forest, we can understand cereal / field agriculture as being **one hundred times, 100x, 10,000% less productive**.

As long as colonialists are completely self-referencing (Chauvinistic) or fixated on our own Field Crop post-Indigenous 'exogenous' society, we will never understand how the earth, sun and human culture works. We have been taught to ignore this period as unproductive and therefore have never considered its strengths.

CALCULATING HARVEST VOLUME

Many common sorts of tree seeds are edible and can play a role in our well-being. If you want to gain an idea of how productive trees are go outside and calculate the production of a Maple tree's seed. People do eat maple seed with some transformative processes. I don't recommend maple although they are tasty if properly sprouted and processed. The goal of this calculation is to estimate the production of the giant three-dimensional canopy across oak (acorns) butternut, hickory, walnut, chestnut, hazelnut and other nut trees. Contrast this volume with what you have seen of linear 2-D wheat, barley, rye, oats, corn and buckwheat fields. Experience in cereal harvest points to a 1/10th (10%) harvest volume.

ELEMENTAL DESIGN

First Nation science (systematic inquiry) is partially based in analysis according to the interaction of the five elements of: 1. Sun (energy/fire), 2. Water (rain/snow), 3. Air (wind), 4. Soil (compost) & 5. Life (Animal, plant). The sun is considered as the energy source (in either its primary or secondary role) for all processes so it takes a central and primary role in community, housing or food and material production. Water, Air and Soil analysis are all considered fundamental to complete understanding. Life as the fifth element is considered as an integrating and animating force for the use of the other four. Human-beings and their organisation are included as a key-stone species. The orchard tree and multilevel forest is considered as an agent of this life force which allows all the elements to work in harmony.

ABOUT THE AUTHOR

I owned an orchard in Deer Park, British Columbia on the Arrow Lake in British Columbia during the 1970's. I lived in and worked with orchards (apple, peach, cherry, pear, plum, hazelnut, walnut, grapes) of the West Kootenay, Dukobour & Mennonite communities. I worked in the orchards of the Okanogan Valley, East Kootenays and a grain farm in Ontario. I worked in provincial networks of Natural Food Co-operative Wholesale and Retail for fifteen years in British Columbia and Quebec.

I have organic gardened since 1971 in Idaho, British Columbia & Quebec following the training of Back-to-the-landers, Dukobour, Mennonite and neighbours of all sorts as well as reading 'Organic Gardening Magazine. I've preserved (canned, pickled, sweetened, salted) fruits and vegetables in most regards, built food dryers and operated them in orchards and in farmers' markets. I have cooked for large groups of people while tree planting.

I have planted well in excess of 100,000 trees in reforestation projects. I have spent these decades studying and harvesting wild fruits and herbs, including a number from trees. I have encouraged wild species to grow and more fully fruit with compost, mulch, water etc.

I have travelled extensively by bicycle (noticing details) in the farm lands of California, Oregon, Washington State, Idaho, Montana, Vermont, Quebec and Ontario. During this time I have harvested Almond, Loquat, Pine-nut, Fig, Date, Cactus-Prickly-Pear, and sixty other tree products listed in the Acknowledgements section p19. I've travelled hitchhiking (interviewing drivers) further and stayed in different communities of New Brunswick, Nova Scotia, Maine, New Hampshire, New York across Canada and the USA several times.

What I have seen is that the volume harvested from Orchard trees (three dimensions) far exceeds that of 2-D Field/Cereal crops. The difference can be understood between how much fruit or seed is available from a 2-D surface-plane and then how much fruit, seed or nuts are available from a 3-D harvesting volume. The estimates that I have gathered from my own observations and reflected in literature from UNESCO studies is that Orchard multi-story Carbohydrate / Protein harvest is ten times that of Field only cropping. I have also become aware that our monocrop Orchards while greater in production than fields still don't approach the productivity of carefully managed multiple story Orchard cropping as a small number of First Nation communities still practice.

B. GAIA's Ten ORCHARD Culture Gifts

The earth as a living creature or Gaia explains a complex consciousness of earth and life in our nurture and sustenance as people and for the whole of life. Ancient peoples considered Gaia as a female 'goddess', earth mother, (everywhere at hand) while modern field / cereal crop civilizations consider God as a male, (dominant-institutionally represented) provider. There are countless different words and meanings for god over millennia but we can take it here to mean 'integrated with life'. The real questions are "How integrated is our: concept of life on earth, our relationship to each other, all other living beings and to the earth itself?" or "What is the natural relation of the human to the forests of the earth?"

a) **Solar Energy Photosynthesis** Orchard trees when combined with multi-storey propagation of plants absorb 92 - 98% of solar energy, which they convert through photosynthesis into matter and water cycle. Cereal and other till-based field crops absorb only 2 – 8% of solar energy. The field crops are originally low storey plants which grew on the forest floor or in complementary relationships or concentrated in fields around forests. Indigenous Peoples typically cultivated Corns, beans, squash (three sisters), grains such as Amaranth or Quinoa, Wheat, Barley, Oats, Rye, Buckwheat and other grains around orchard clusters of Butternut, Oak-acorn, Hazelnut, Chestnut, Brazil-nut, Peach, Cherry and other productive trees. Western mono-crop sterilized orchards are much less capable solar converters. Indigenous multi-level agricultural orchard trees supply a whole list of ecological services to both these low plants and to people as is described below.

b) **Trees roots pump water, minerals and nutrients** from as deep as a canopy is high into the earth's substrate to the surface. Fall leaves and other droppings continually replenish the soil. The water pumped by each tree puts mechanical pumps to shame.

Cereal/field crops pump from inches or a couple of feet of root stock exceptionally, are dependent on continuous artificial sources and generally have little to replenish the soil in comparison. **We need tree-root not grass-root social action.**

c) **Bio-sphere's creation of weather.** Orchard agriculture photosynthesis absorbs/converts massive amounts (92 - 98%) of solar energy into the creation of plant matter or water-cycle. Continental cold spots draw warm moist ocean winds inland. Cereal / field crop agriculture absorbs only 2 - 8% of solar energy to create continental hot spots which push wind from the continent to the ocean and therein never complete the water cycle. Energy reflected from low plant or non-absorbing landscapes is equivalent to blast-furnaces of energy per day per tree-site or the release of many atomic bombs' worth of energy per year in each small urban region. When energy is multiplied continentally over massive ever enlarging desert and field crop regions, adjoining life is destroyed through continual extreme weather events and it's difficult if not next to impossible for life to re-establish itself. If deserts double from the present 25% of continental area presently parched, they would prove unstoppable.

d) **Bio-Atmospheric Water Transfer** 60% of ocean to atmospheric moisture to land transfer is through contact with tree leaf surface in living orchard forests. The warm moist ocean (high pressure) winds drawn by the cold forest (low pressure) forest pass through the fractal surfaces of leaves and limbs condensing on these surfaces and leaving water droplets, which are absorbed or drop to the ground. Cereal / field culture low crops provide little leaf surface area. Rain only supplies 40% of water transfer to land.

e) **No-till Food-Production** Combined orchard & field-mulch stands return yields on human-energy expenditure (in range with factors above) without disturbing soil or complementary life productivities. Indigenous people plant, strategise and encourage 3-D landscapes over seven generations to include specific ecology-based orchard trees and the combination of second, third and fourth level canopy plants to work in harmony. Seven generations of planning builds a knowledge base over continental spans and hundreds of years. Orchard / field cultures are complementary, self reproducing systems abetted with minimal human labour. Indigenous practices of gathering and mulching organic material renews and feeds the soil with micro-organisms and insects, lowers plow or weeding labour, reduces water needs drastically and protects from rain-mud splash back on leaves and edible parts. Working with life's principles is why the word indigenous means 'self-generating' from its Latin origins. Exogenous ground-breaking agriculture exposes the loose soil to wind and water erosion as well as killing symbiotic beneficial bacteria, worms, insects and animal habitat.

f) **Oxygenation of water and air.** Vibrant life including full human consciousness depends upon rich oxygen sources in the plant, animal, aerobic bacteria, fungi and other life kingdoms. Water plants, animals, fish, molluscs, algae, eels and other life kingdoms as well depend upon rich oxygenation of the water. This oxygenation is accomplished through the production of oxygen through photosynthesis by primarily trees as well as other plants on land and the constant movement of river, creek, lake and sea water over the land's surface as well as in aquatic and marsh plants in relatively low water covered fresh and sea water basins and shores. The oxygen in air and water released by this life will in turn oxygenate animate or vegetative life, other waters like the seas and other surfaces of the earth in a living chemistry of ecological production.

g) **Humidification of air** is accomplished through this same living metabolism. The trees primarily and plants transpire water as they breathe. Human life and all life are richer, energetic and more productive when the air is humidified. Our respiratory systems are designed for this living water and oxygen component.

h) **Storage of Water** Trees and associated multilevel plants store water in ways that are predictable and significant to the immediate landscape, land-lots, surrounding districts, watersheds and continents. Planners and Landscapers can calculate yearly rain and snow-water absorption by planned trees and plants coverage. Trees moderate water release on a yearly basis that keeps waterways, streams, rivers, lakes and ponds flowing as well as agricultural or landscape plants in a constant replenishment. Water-ways in a full orchard region are kept at constant levels during four seasons appropriate to canoe transport, swimming, drawing of drinking and other water services, aquatic and marsh agricultural plant food and fibre productivity as well as other biosphere services.

Productive forest cultivation also absorbs massive quantities of the biosphere's water supply which can renew deserts and liberate whole Continental Shelves. Ancient continental indigenous peopled tall-tree forests were massive sponges that lowered the ocean's levels and exposed more of the continental shelf for increased land-base biosphere productivity. One explanation of stable polar glaciation can be found in the massive absorption/ conversion/ storage by trees and plant life of solar radiation. When polar glaciation was stable, sea levels were lower even further exposing more of the continental shelf. Continental shelves hold a key to discovering lost indigenous history in the now submerged waters off our shores, ancient heritage and the earth's land-based productivity.

i) **Moderation of air temperature** through the absorption of solar energy and release of metabolic heat by trees and other living beings significantly moderates the climate. As trees primarily and other plants transform solar energy through photosynthesis and metabolize food (living humus by-products) into their living processes, they manufacture ATP the energy source of cells. Trees as well function as Heat-pumps descending as deep into the warm substrate (as deep as mechanical Heat-pumps today) as branch canopies rise and transferring this heat to the atmosphere through internal water conduction. In a forested region and continent, the metabolic releases and wind calming of living trees moderate temperatures in summer and winter are favourable to human and other creatures.

j) **Tree wood storage of toxins** (important today) can play an important role in the cleaning up of human toxic waste from rivers, lands and air. Trees and other plants absorb water and soil borne toxic materials through root systems as well as air borne toxins through leaf metabolism. These systems continually manufacture new layers of wood (tree rings) each year in which toxins are stored and transformed. Many complex synthetic chemicals and heavy metal toxins take decades and even hundreds of years to break down (long half-lives) to their inert natural balanced molecules. While certain Effective Micro-organisms and Bacteria produced in living systems can aid in this process, the scale on which humans have contaminated the biosphere these past hundred years requires safe removal and storage. Trees in combination with living ecospheres are our best resources for removing man-made toxins and thereby restoring the productive biosphere to a functioning capacity.

SUMMARY (a-j): Life thrives when the orchard/forest role is nurtured for: a) Solar energy equations b) Tree pumping c) Bio-sphere weather creation d) Bio-atmospheric water transfer e) No-till agriculture. f) Oxygenation of water and air g) Air humidification h) Storage of Water i) Moderation of air temperature, j) Tree Storage of Toxins. Deserts are created when this role is undermined or ignored.

C. WELCOMING PEOPLE

METHODS OF FOOD PRODUCTION DETERMINE CULTURAL SELF-CONCEPT

It is hard to explain 6,000 years of planetary denigration when our minds and expectations have been thus programmed. Huge deserts exceeding 20% of the land mass have been created over much of this period. Enormous environmental contamination has become part of our way of life. North American's produce 86 tonnes of garbage per person per year, according to the World Resources Institute report The Weight of Nations. www.wri.org Yet we continue to harbour the false assumption that our field / cereal agriculture is somehow productive, advanced or scientific and worth it all. The field till-culture of 'breaking the soil' agriculture also breaks humans because it breaks the productive laws of nature. We are not aware in our analysis of the Indigenous science of ecological productivity, which produces according to the principles that I have outlined above at rate ten times for foods and another ninety times for other coincidental materials such as bark, leaves, animals, birds, fish, water, mushrooms, berries, herbs, sap, shelter, moss, algae, bacteria etc.

SYLVALIZATION STARTS WITH PEOPLE

Without a firm understanding about efficiencies of food production we are constantly caught in the apologetic dilemma for cereal culture civilization's supposed advantages. First Nation friends who understand their ancient urban heritage call for "*Sylvalization*" in clear appeals for a tree/forest foundation to sustainable urban built environments. Dense Mound cities rose among the tall trees of the forest bringing more light and security from flooding.

Peaceful relations between individuals allowed for systematic planning and recognition for the importance of the tree and its services over multiple generations. Without recognising the role and importance of each person and fair human relations, there can't be sustainable environmental management. Colonial tradition is rife with self-defeating conflict, spread from Babylon, empire after empire destroying indigenous abundance including European Celtic and other American nations losing Sylva culture and Sylvalization heritage only to turn in aggression worldwide. Reconnecting to our sustainable indigenous heritages and adoptive lands everywhere represent opportunities to rediscover ways of living together.

LAW OF THE GREAT PEACE, KAIENEREKOWA

The Haudenosaunee (People of the Longhouse) Iroquois Law of the Great Peace by Deganawida (Canadian Huron), Hiawatha (Onondaga, American) and Jingosaseh (leader of the Clan mothers) is a breakthrough for many reasons.

Sometime in the long period of First Nation governance before the European invasion brought massive epidemics killing 95% of the estimated 110,000,000 people of the

America's, before soldiers, traders and religious fanatics from various nations of Europe sought to dominate the People, various laws and practices of peace were established across the hemisphere, Turtle Island as a continent and the North-east as a confederacy.

Thirty confederacies across Turtle Island united some two hundred nations mostly in groups of seven nations. The Iroquois Haudenosaunee confederacy represented five nations. Together the confederacies of Turtle Island governed this continent systematically with continental trade. The Law of the Great Peace is known as the Kaienerekowa in Kanien'kehaka and by other names in the other languages of the Haudenosaunee Confederacy as well in the other languages of the continent.

ECONOMIC DEMOCRACY

The Kaienerekowa is a remarkable foundation in Economic Democracy. The day-to-day working and economic life of the people is their formula for peace. 'Caucusing' (derived from the Iroquois meaning 'Grouping of like-interests') workers allowed each specialty to unite together as Production Societies in efficient production for community service.

Caucusing also allowed for production societies to caucus (subdivide and self-distinguish) into different styles of operation or technique and hence a cultivation of diversity. This continuing respect for diversity is described as the Two Row Wampum. Each working style continues independently and learns from the other as they walk parallel paths.

Many European traditions have been influenced by the Economic Democracy of the Americas. Both our modern American influenced Capitalism and Communism are direct results of incorrect understandings by European researchers. The capitalist and socialist disasters of the past two hundred years have been based on ill-conceived applications.

Thomas Jefferson, Benjamin Franklin, John Adams and other founding fathers of the American rebellion turned to the American Native Confederacies in order to understand democratic potentials. Because Europeans had segregated themselves in colonial settings and administration, they never understood the deeper foundations of Economic Democracy and instead recreated only select aspects of First Nation confederate Political Democracy.

Karl Marx and Freidrich Engels studied reports of the anthropologist Morgan who in that period had lived and traveled among some confederacies. Morgan's reports of equality influenced Marx's concept of Communism. Morgan understood some aspects but did not differentiate key aspects of Economic Democracy such as distinguished diverse equality.

TWO ROW WAMPUM

Two-Row Wampum was the first treaty signed by the Dutch as they were welcomed to continue living side by side with the Haudenosaunee. The Dutch would travel in their ships and live in their nuclear family cabins or forts, while the Haudenosaunee would travel by canoe and live in their Longhouse and Pueblo community homes. The Haudenosaunee could have easily wiped out the Dutch settlements at this time particularly concerning Dutch massacres and violations of long standing community civil laws.

The Haudenosaunee upon observation of the sickly, divided and inefficient ways of their guests were confident that the Dutch would align closer and closer with the long standing First Nations. Many of the Dutch and other European settlers fled Feudal regimentation and did integrate with the Haudenosaunee and other First Nations of the New Netherlands or New England settlements, but violent European Feudal regimentation and armed coercive regimes forbid many settlers from appealing to the nurture and protection of Native hosts.

ELEVEN WAMPUM STRING-BEAD VALUE

Haudenosaunee introduced Dutch, English, Swedish, French and German settlers to continental economic system based in the String-shell-beads. Wampum was manufactured at specific production sites across the continent (eg Long Island NY). Nations each had name for string-beads such as Wampum, Esnuguay or Seewant by the Algonquin, Kayoni by Mohawk, Asurgy by Wendat, Ote-ko-a by Seneca, Wahbung by Cree and even Quipu by the Inca of Peru representing a hemispheric and integrated system of (This is partial list):

- 1) Recognized **Consideration** for labour in the Production Societies PS for male and female labours, all community service & goods production. Devoted PS accountants kept track through time-based accounting of individual labour contributions,
- 2) **Compensation** for this labour to the individual laborer, through the Production Society and each community as well as across Nations and Confederacies,
- 3) **Capital** accumulation in recognition for labour's value as a PS investment for progressive ownership from youth apprenticeships. Records describe individuals voting with their Wampum strings with respect for the wisdom of elders as Master's.
- 4) **Currency** in exchange for goods and services from the whole community, nation, confederacy and continent. Archives record both First Nations peoples and whites using wampum beads and strings capital in exchange for goods and services.
- 5) **Condolence** as a system of social security for the ill, infirm, handicapped, widows and for all losses. When tragedy struck a family, the Production Society and community would give its members Wampum as a means of recovery to well being.
- 6) Diplomatic **Conveyance** as a system of asset based negotiation between persons, Production Societies, communities, regions, nations and confederacies. Resource use compensation was arranged for multiple resource specialization and harvesting.
- 7) **Collegial** education accreditation of youth in vision-quest & apprenticeship engaged in mentorship relationships with masters and elders in each field & society (guild).
- 8) **Caucusing and Consensus** among Prod. Soc. and communities was facilitated by Wampum's time-based accreditation, allowing groups to unite and divide their effort and knowledge pools while respecting the link between the individual and the group.
- 9) **Cataloguing** of knowledge & information as part of a graphic writing and mnemonic system according to event, domain and affiliation.
- 10) **Communication** of quantities & qualities integrated as part of the graphic character writing system for individual, economic, scientific, community and cultural purposes.
- 11) **Costume** - public exhibition of earned and inherited labour and knowledge status integrating dress to display and communicate cultural values.
- 12) **Celebration** - for the gifts of each personality in community determined individually through the vision quest.
- 13) **Convivial Adoption** – economic inclusion based in progressive involvement. With foreign epidemics First Nation communities continually welcomed and recomposed.

Wampum represents a system of **Input based Labour accounting** which is the foundation of human recognition and hence the core of the Law. By considering all inputs peace was made between the diversity of inputs that are required to make a full human economy. Correlation was made between these capacities, social-economic needs and Outputs.

European money arises from **Transaction based accounting**. Monetary transactions only are accounted for in our system. Labour is covered only if there is enough money from each transaction to cover all eventualities. In this sense labour is a secondary factor covered only by reverse-accounting from the transaction. Outputs are not systematically accounted-for.

VISION QUEST

Youth and individuals at all stages of their lives cultivated Personal Vision. The community welcomed each person to find their particular vision and gift for community service. With a system of Input-based Accounting, youth and others could contribute to community well-being through their particular gifts. Dreams and visions were sought through sleeping and fasting, contact with nature and the seeking of adult mentors to guide and instruct in specific trades, although an individual could as well conceive and follow a personal path.

Vision is in contrast with Monetary accounting exclusive economic systems and the resulting competitive rather than collaborative education. Everyone is afraid of being left out of livelihood and we accept the jobs and the school grades the system will offer.

'INDIGENOUS' (derived from the Latin meaning 'Self-generating') ECONOMY

'Economy' from the Latin means 'Care and nurture of the home or family'. Because it takes many kinds of inputs to complete an economic transaction or economic cycle, money excludes or selectively ignores some of the most important labours of our well-being. Money can be seen as linear expecting only give and return. Wampum or Indigenous Economy considers a whole cycle of giving and receiving across many individuals, families, communities, regions, nations and confederacies all acting towards the benefit of the whole people simultaneously yet recognising the role and acquired knowledge of each individual.

GREAT WHITE TREE OF PEACE

Great White Tree of Peace or the White pine is central to the Kaienerekowa and represents intentional scientific orchard forest culture. The economic Wampum system advocated by Deganawida derives from orchard-based peoples going back tens of thousands of years. Longhouse peoples grew clusters of each Orchard tree type to aid in pollination. Around tree-clusters, corn, beans and squash, the Three Sisters were planted. Tree nuts and the sisters give a balanced complex carbohydrate, minerals and complete protein nutrition.

Quinoa, Amaranth other grains, fruits and vegetables were as well employed in great diversity. Analysis of bone, teeth and hair of Mississippi Valley peoples show that meat was consumed moderately only twice per month. The obvious efficiencies of sun and human energy production of macronutrients in the vegetarian diet are enormous.

Mohandas Gandhi echoes the Great Law of Peace when he stated *"Regard human labour as more even than money and you have an untapped and inexhaustible source of income, which ever increases with use."* in his letter to a British governor circa 1945. Gandhi was reflecting an ancient Indian economic tradition, but this system was by his time eroded by long periods of suppression by British and other European overlords. Neither Gandhi nor Hindu nor Moslem traditions, nor Indian and Pakistani peoples remember or understand the whole of their ancient indigenous economic traditions and cultural system. The Great Law of Peace has an important role around the world to describe and enable people to return to indigenous economic (Greek = 'care and nurture of the home and family) roots. Examples such as the India and Pakistan partition tragedy left many dead. Heritage loss is worldwide.

COMMUNITY MAPPING

First Nations practiced a form of Urban Planning and management through the use of mapping and community model building. Mapping allowed communities to as well consider a wide range of contributing factors or multiple disciplines in a place-centered management. Records of maps show records of complex ecological and economic factors represented on paper, birch bark and skin maps as well as in three dimensional models that Europeans found in the cities, they were invading.

Mapping represents a form of inclusive inventory or cataloguing for all factors that; allow the contributor or the reader to focus entirely upon his or her field of interest. Some might be only interested in proximity to hazards or resources and can grow in more holistic full cycle understandings from there.

Others will relate their particular field of interest to a whole range of factors represented in a computerized Geographic Information System GIS mapping. Green Mapping provides a look at multiple ecological factors www.greenmap.org Eco-Montreal Tiohtiake Green Map www.eco-montreal.mcgill.ca is a multi-layered look at ecology in the greater region.

First Nations map their resources in complex GIS treatments today www.nativemaps.org Tsi Tetsionitiakon Sustainability Rooted in Heritage <http://cbed.geog.mcgill.ca/WIP.html> maps First Nation Placenames for the greater Montreal region Tiohtiake and the foundation for understanding this culture.

ECOLOGY

Ecologists being rooted in the mainstream exogenous-economy and agricultural thinking haven't understood how to integrate Human Ecology into physical ecology yet. The Kaienerekowa provides an expanded framework because it is based on a comprehensive set of inclusive economic principles. The first principle of working with diversity both in people and in nature is to recognise the contributions of each to the whole. Unfortunately ecologists are still thinking and competing in terms of output-based economies.

First Nation accounting principles set up a local to continental system of accounting. Labours were divided up into Caucuses or 'Groupings of like-interests' which specialties may include: Caring for the home, children, handicapped, elderly, medical healing of

sickness, field agriculture, orchard agriculture, building houses, canoes, trade, making clothes, cooking utensils, accounting, economic planning, political organisation etc.

LONGHOUSE or PUEBLO LIVING

Longhouse, Mound / Pyramid Cities, Pit-house, Pueblo communities represent deep urban planning tradition on the part of First Nations across Turtle Island. Whole populations planned inclusive community, region, nation and confederate levels of interaction. Collective grouping of dwellings, solar charting, fecal / urine nutrient recycling through plants and strong intentional relationships. Rather than each person alone as a grass root before the 'Grim Reaper', families and whole communities collaborated into tree-like agglomerations of ownership, collective-intelligence, production and consumption, with deep roots into and in harmony with the landscape. In this system of things each person's livelihood mattered.

Today ecologists would do well to be less 'issue' or 'cause' focused and more 'livelihood' or 'people' focused with both our allies and our supposed adversaries. By planning in a livelihood way with adversaries as well as our friends, we recognise their essential strengths as potential contributors to a properly functioning economy. These are the Great Law of Peace and Two Row Wampum traditions.

FEMINISM

Without a livelihood focus, feminism today has been translated as female empowerment in capitalism and not rooted itself yet in our universal Indigenous Knowledge roots. The indigenous woman was respected and compensated for her work of every kind. She developed ownership and a strong voice in the management of her community and nation. Because of traditional female stability in the community, early chronicle reporters understood that First Nation communities were matriarchies.

While it is true that both European men and women had never seen empowered women of this kind before, and still haven't to this day, men were also respected for their contributions and given significant roles in the developing and managing of the fruits of their labour.

MEDICINE WHEEL

The Medicine Wheel, the Kaienerekowa and other First Nation breakthroughs provide the core of understanding for Economic Democracy and peace. The Medicine Wheel represents a full cycle of human interactions giving and receiving across whole communities and are about balance between diverse factors such as Wisdom, Healing, Vision and Community. Each of these traditions has many translations filtered through the colonial period. We need to triangulate (look from the different perspectives that each person is afforded in community) in order to understand our heritage and human potential. They should each be seen as samples of an ancient hemispheric tradition.



The Medicine Wheel can be seen for all its moving human interactions as an economic gyroscope with a balance and harmony that come from its constant recognition of inputs of giving and receiving across whole communities and whole nations. Accounting and mapping for these inputs empowers individuals according to the intentional will of its people through its collective structures. As the wheel spins, it gains precedence, a cybernetic quality of steersman-ship which guides the community along its path.

ELDERS

Our real focus needs to be on supporting First Nations in a full multi-disciplinary compiling of this heritage from living memory and archival sources across the hemisphere. Australia started a process through a process of truth and reconciliation, White with Aboriginal, based in a national apology issued by the Labour government of fifteen years ago.

Essentially Whites are beginning to learn and valorize Aboriginal sustainable land management. The Our Sacred Future Foundation www.oursacredfuture.org works to valorize Indigenous Knowledge for sustainable living. The process of consultation involves working with all generations but beginning with elders, who can develop research parameters and strategize the timing and involvement of others.

VOLUNTARY SIMPLICITY VS SOLIDARITY

I'm glad folks are talking on the limits of growth, but falls into an incomplete pattern of fixation on limits such as 'overpopulation' leading us to negative colonial social-control attitudes tending to be 'Other-denying' rather than inclusive.

Lifeboat survivalists tend to propagate a linear 'Puritan' message and beget an ecological Armageddon. Simplicity based in forced charity is a dead-end alley if bitterness only heals our deepest wounds in disaster. If we continue to approach people with alarms and no solutions, they will continue patterns of despair and competition for resources.

The simplicity of Puritans, Catholics and other religious groups arises in a European linear charity model which generates conflict. What Puritans never learnt when they landed and

survived by raiding abandoned First Nation store houses (epidemics of European illnesses had arrived before their arrival), are deeper levels of solidarity beyond simplicity based in full cycles of giving and receiving.

CAPITAL – SOCIALIST CO-DEPENDENCY

Capitalists take and Christians (socialists) give, like they need each other. These two sides of a schizophrenic personality each deny the importance of the other. Capitalists understand the importance of recognising 'initiator-entrepreneur-Founder' and Supplier roles. Socialists recognise the Consumer or Worker. Neither looks at a full range of participation for Founders, Workers, Suppliers and Consumers. Monetary-capitalists can't organise all stakeholders because money is incapable of recognising the innate capacities of diverse players. Socialists don't account or recognise diverse stakeholders because they believe in a simplistic equality. A good portion of our social/political activity is tied to socialists and capitalists reacting to each other's weaknesses. This is a perpetual game with no end.

THE CYCLE OF GIVING AND RECEIVING

First Nations cultured a range of relationships based in the cycle of giving and receiving in a full cycle of livelihood. Indigenous Economic accounting puts Double-entry bookkeeping to shame because they are covering the whole equation of a whole economic cycle and Europeans both left and right are fixated on incomplete parts of a linear-equation.

First Nations promoted multi-stakeholder Councils with the representation and involvement of their Production Societies. They further allowed for the Caucusing (derived from the Latin meaning 'Grouping of Like-interests', whenever differences could be cultivated.

WAITING AT THE WOOD'S EDGE

We've yet to properly immigrate to Turtle Island. True immigration involves a process of respect for existing inhabitants. First Nations practiced a policy of 'Waiting at the wood's edge' to ask for permission to enter any community. First Nations can steward our entry.

We can fulfill the European obligation to the Two Row Wampum treaty by respectfully integrating and adopting indigenous economy so that we may live as fully human people and indeed become an 'indigenous' people for our time and place again. Indigenous traditions, ecological planning, Architecture, Mound Cities and practices put forth a roadmap with pressing timeframes.

We need to understand these tools of relationship if we are to garner our resources. The problem is our linear accounting, monetary and economic models plus a whole range of linear science, relationships and history that grow from these limitations. Integrating Orchard/Field agriculture and Indigenous Economy are necessarily for human well-being on earth. Where can we plant the orchard? Wherever there is vertical space to plant a seed or a sapling and to care and nurture it as part of ourselves. By eating and buying tree-based food we empower orchards in our present economy.

ATTITUDES OF SCARCITY AND OVERPOPULATION

A typical debate today is that; Global Food Supply is jeopardized by dwindling geological oil inventories. We have extracted more than half of all possible oil reserves. European style field agriculture uses oil as the fuel for all engines used in production, transportation, storage, processing, refrigeration, distribution, wholesale, marketing and disposal of food stuffs. Continuation of this food-oil-energy production strategy threatens human survival.

A response to this debate has been to advocate organic food growing, local Community Supported Agriculture, decentralised ownership within the existing Field/Cereal crop system, vegetarianism, forgiving of international third world debt, more revenue directed to food than military resources and funding to world government through the United Nations.

Tied with attitudes of scarcity are concepts of Over-Population. A belief in too many people usually translates as denying others their right to exist. Other-denial increases brutal competition for scarce resources and embroils limited resources in denigrating human interactions and preparation for war.

D. TREE PEOPLE

RECOMMENDATION: THE INDIGENOUS MULTI-LEVEL ORCHARD PRODUCES 100 X the Food, Water, Air, Soil, Toxin absorption, Air Conditioning & Heat, than agriculture.

It's important that human-kind understand a contributing relationship to the orchard forested planet. The Great Law of Peace outlines Economic Welcome by providing the tools for recognising effort, living and working together under the umbrella of the Great Tree of Peace.

The orchard planet empowers us all. Each one of these programs and a number of them together restore positive relations among people. Ecologically sound Orchard-field food production is a balance of the labour it takes to animate, support and empower the world's population. The edible planetary Orchard's plenty is essential to human cooperation.

Orchard tree forests are the very engine for our living planet's relationship to the Sun and a fundamental reality of life on earth. In the same way we cultivate forests as preferred solar energy converters and habitats for biodiversity, we need to cultivate human diversity as a reflection of this. Climate Change must equally address the science of human relations

We need to prepare broad strategies for Indigenous Economy, caucusing, inclusive input accounting for all male & female labours, community green mapping, organisation for collective apartment & townhouses, circle & council process, river-based habitation, agriculture & transportation, voluntary simplicity and shared community opportunity.

Organisationally it is useful to visualize ourselves as a Tree-roots culture going much deeper than grass-roots social action. We will aggregate ourselves economically in relation to family, community, collective and corporate groupings as trunks and branches, which gather and express our specialized strengths, interests and needs locally. As tree roots, we stand not alone before a centralized state but together in circles of intimacy. Our personal and family life becomes an integral part of the human tree.

A tree roots collective approach allows human-kind to develop Whole System approaches rather than divided as grassroots under hierarchies standing before the Grim Reaper. We can stand together as families, clans, communities, regions, nations, confederacies, continents and as one world in the long indigenous tradition.

The Orchard dweller is empowered through economic association with others. We can think of ourselves as tree people living in the blessing and plenty of nature's design on earth. We can again become an Indigenous (self-generating) people to our time and place.

REFERENCES:

The UNESCO studies on the Sahara which are referred to have descriptions of the following principles. The articles that I have from UNESCO are quite voluminous and need to be specifically linked to each of the assertions made. I read the original articles in the 1970's. I feel they are worth mentioning here because they represent a large body of work by this organisation on desertification, which deserve more detailed research and resources to compile and link. The UNESCO studies on Agro-forestry are numerous in the context of studies in Africa, Asia, Australia, South and Central America.

- 1) The original inspiration for this work comes from studies undertaken by the United Nations Education & Scientific Organisation UNESCO, which I had the privilege of reading during the 70's. Research into the origins of the Sahara and its spread into the Sahel desert of Northern Africa concludes that 6,000 years ago this land was lush with forest. The analysis concludes that cutting down of forests for Field / Cereal crops and driving of Indigenous people from the area by Egyptians, Carthaginians, Greeks and Romans, precipitated the desertification. As forest is cut, its capacity to absorb and convert 95% of solar energy through photosynthesis was progressively compromised. The cold spot created by the conversion of sunlight into matter causes a low pressure area in which the warm moist sea winds from the Mediterranean Sea and Oceans were drawn. Consecutively the forests of Babylonia to the east were as well being cut. The air masses above the field crop land become hot with reflected solar energy as only 5% of solar energy is absorbed in these regions and winds pushed from the continent towards the sea further eliminating moisture transfer.
- 2) UNESCO continues its studies with analysis of Agro-forestry efficiencies from which many of my other conclusions are drawn about the capacity for forests to complete water cycles, pump water, mine the earth at great depth as well as colonise up to one hundred feet of the earth's crust with myriad life forms.
- 3) Their Number Become Thinned, Native American Population Dynamics in Eastern North America, by Henry F. Dobyns, 1883, University of Tennessee, Knoxville Press. Dobyns as an anthropologist in studies of the Timucuan Longhouse peoples of Florida and their forest-agriculture lays an important foundation for understanding the ecological productivity of Eastern American Orchard-Field culture.
- 4) Mutual Aid, a Factor of Evolution, by Petr Kropotkin 1842 – 1921, Blackrose Books, Montreal. Kropotkin as a Russian geographer spends decades of study in Siberia and draws the conclusion that cooperation is the key factor of evolution. Kropotkin draws on his contact with forest-living Indigenous Russian peoples. He outlines the importance of Guild systems of progressive ownership for these societies and subsequent north Russian urban societies. Kropotkin's study of animal populations as well point out the foundation of cooperation within and among species as key factors of their well-being and sustenance.

- 5) The Incas, by Garcilaso de la Vega, 1539 – 1616, Discus, Avon, Orion Press, NY. Garcilaso as a Mestizo Inca / Spaniard born into the period following the conquest, travels extensively throughout the America's among the Spanish. Of noble blood, he describes the Incan heritage of social, economic and political organisation. From his writing we understand the role of detailed input accounting for labour and part of the accounting and statistical tradition of the Inca realm.
- 6) Book of the Fourth World, Reading the Native Americas through their Literature, by Gordon Brotherston, 1992, Cambridge University Press, NY. Brotherston studies the graphic written languages of the Americas, their remaining volumes, the burning of the libraries of Tenochtitlan Mexico City, the multi-functional nature of glyph pages as stories with many integrated dimensions and a review of writing systems throughout Turtle Island.
- 7) Seven Generations, a History of the Kanien'kehaka by David Blanchard, 1980, Kahnawake Survival School, Tiohtiake, Kanien'keh. This Mohawk perspective on their history is the foundation of their elementary and high school program. The Law of Great Peace, Kaienerekowa is described in its historical context.
- 8) The Constitution of the Five Nations or The Iroquois Book of the Great Law, Kaienerekowa in Kanien'kehaka by A.C. Parker, 1916, Iroqrafts. The Kaienerekowa is exceptional as a human social document because it lays the economic foundation for peace in the practice of inclusive economic organisation in a system of Family, Production Society, Community, Region, Nation, Confederacy and Continental investment and exchange through the Wampum System of accounting.
- 9) Wampum Belts by Tehanetorens, 1984, Six Nation Indian Museum, 1972 describes various forms of Wampum strings, belts as part of their function as Diplomatic Conveyance between nations, Condolence for the sick, injured and infirm as a form of social security. *"The word wampum is not an Iroquois word. New England settlers shortened the Algonquin word Wampumpeag, meaning a string of white beads, to wampum. In the Seneca language it is called Ote-ko-a, a word that is the name of a small fresh water spiral shell. Wampum has often been called the money of Indians but it is not true. Indians did not use it as currency in any way. It was very valuable however and was later used by white people as currency. Wampum was made from the white conch shell, the common round or hard shell clam that comes from the Atlantic Ocean."* While there is much disagreement on the use of Wampum, this shows how an ancient tradition can be forgotten over a period of hundreds of years when epidemics and an invading force eliminate and displace its peoples and their traditional economy. It is likely that Wampum, Esnoguay, Seewant, Quipu or Ote-ko-a were systems of accounting for Compensation, Currency, Capital, Condolence and Diplomatic Conveyance which were used across the American hemisphere. Every nation had their own term for these value systems. As a system of accounting records point to issue in each specialised Production Society as recognition for work performed as first ownership shares, which later could be used for other purposes. As an integrated value system it is true that Wampum represented more than our exchange money. The use of shell-bead-string currencies was also found throughout the Pacific Islands, in Africa, Asia and Europe. One wonders with such wide spread use so many thousands of years ago whether the world's indigenous history held a greater world unity than we understand today.
- 10) Shell Game, A True Account of Beads and Money in North America by Jerry Martien, 1996 with Foreword by Gary Snyder, Mercury House, San Francisco. This is a discussion of Wampum and other Shell-bead-string value mediums.
- 11) Another America, Native American Maps and the History of our Land by Mark Warhus, 1997, St-Martin's Press, NY publishes a set of traditional maps used by First Nation communities on Birch-bark, Skins, Native Paper and other medium. The maps are noted for their gathering and representation of ecological material on plants, animals and living resources of all kinds. Pre-conquest First Nation communities of Central and South America are described for their building and presentation in town centers of three-dimensional models of their cities replete with buildings, trees & more.

- 12) Iroquois Foods and Food Preparation, by F.W. Waugh, 1916, Canada Department of Mines, National Museum of Man. This 243 page book with pictures of traditional cooking, gathering and processing implements and discussions on different foods used including the tree nuts: Hickory, Bitter-hickory, Walnut, Butternut, Hazelnut, Beechnut, Chestnut, Oak Acorns from Swamp, White, Red and Chestnut Oaks.
- 13) Narratives of New Netherland, Original Narratives of Early American History 1609-64 edited by J.Franklin Jameson, 1909, Charles Scribner's Sons, NY p156 "*In the evening, more than forty fathoms of seewan were divided among them as the last will of the savages that died of smallpox. I saw another hundred fathoms of Seewan divided among the chief & the friends of the nearest blood.*"
- 14) Fatal Harvest, the Tragedy of Industrial Agriculture with Vandana Shiva and Wes Jackson among others. Contrasts organic field agriculture vs chemical industrial agriculture. This large book describes organic farming practices with some orchard culture, herb gathering, plant encouragement, no-till methods & is concentrated on tilled-field agriculture.
- 15) 1491, by Charles C. Mann, as a book 2006 and in the Atlantic Monthly, March 2002 "Before it became the New World, the Western Hemisphere was vastly more populous & sophisticated than has been thought; an altogether more salubrious place to live at the time than, say, Europe. New evidence of both the extent of the population and its agricultural advancement leads to a remarkable conjecture: the Amazon rain forest may be largely a human artefact..." This article gives extensive research references as well as a fascinating account of travel in the Amazon and ancient America.
- 16) The Medicine Wheel, An Integrated Scheme of Thought to Guide Action, Ian Chapman, David Newhouse and Don McCaskill, 2003 (?) "*The term 'medicine' in tribal tradition refers to any substance, process, teaching, song, story or symbol that helps to restore balance in human beings and their communities. The medicine wheel is an ancient symbol which represents an entire world view (a way of seeing and knowing) and the teachings that go with it.*" P1
- 17) Building Communities from the Inside Out, A Path Toward Finding and Mobilizing a Community's Assets, J Kretzmann, J McKnight, 1993, Center for Urban Affairs and Policy Research, Neighbourhood Innovations Network, Northwestern U., Evanston, Illinois. "*Most of this guide is devoted to spreading community-building success stories. These stories are organized into a step-by-step introduction to a coherent strategy that we have learned from neighbourhood leaders. We call this strategy 'Asset-based community development'.*"
- 18) Futures By Design, the Practice of Ecological Planning, Edited by Doug Aberley 1994, New Society Publishers, Gabriola Island, BC, P2 "*is a tool to assist individuals and groups in evolving localized but interrelated approaches to sustainable and just reinhabitation of bioregional habitats.*
- 19) In the Absence of the Sacred, The Failure of Technology & the Survival of the Indian Nations, 1991 by Jerry Mander A thorough look at technological performance for humans.
- 20) Economic Democracy, The Political Struggle of the 21st Century, JW Smith, www.ied.info 2003, p35, Adam Smith, "*A small quantity of manufactured goods purchases a great quantity of rude produce. A trading or manufacturing country, therefore, naturally purchases with a small part of its manufactured produce a great part of the rude produce of other countries; while on the contrary, a country without trade and manufactures is generally obliged to purchase, at the expense of a great part of its rude produce, a very small part of the manufactured produce of other countries. The one exports what can assist and accommodate but a very few, and imports the subsistence and accommodation of a great number. The other exports the accommodation and subsistence of a great number, and imports that of a very few only. The inhabitants of the one must always enjoy a much greater quantity of subsistence than what with their own lands, in the actual state of their cultivation could afford. The inhabitants of the other must always enjoy a much smaller quantity . . ."*
- 21) Native Trees of Canada, by R.C. Hosie, 1975, Information Canada. "*When Native Trees of Canada first appeared in 1917, it included descriptions of approximately 100 trees and large shrubs.*

During the past 50 years, several new species have been added in succeeding editions until, today, nearly 140 species are represented.

- 22) Fruit Tree Propagation, Publication 1289, Agriculture Canada, LPS Spangelo, R. Watkins & EJ Davies. “. . . most cultivated fruit trees are not only hybrids but of such mixed”
- 23) The Man Who Planted Hope and Grew Happiness by Jean Giono on the replanting of a desert section of the Provence region and its return to life, 1910 - 1945 of France by Elzeard Bouffier.
- 24) In the Shadow of Man by Jane Goodall, 1988, Phoenix Giant. I had the occasion to collaborate with Jane by presenting a workshop to hundreds of youth on Ecological Mapping in a Roots and Shoots Conference near Montreal in the late 1990's. *“Toward the end of our time at Olduvai, Louis Leakey began to talk to me about a group of chimpanzees living on the shores of Lake Tanganyika. The chimpanzee is found only in Africa, where it ranges across the equatorial forest belt from the west coast to a point just east of Lake Tanganyika. The group Louis was referring to compromised chimpanzees of the Eastern or Long haired variety, Pan troglodytes schweinfurthi, as they are labelled by taxonomists. Louis described their habitat as mountainous, rugged, and completely cut off from civilization.”*
- 25) Environmental Law: Perspectives from Human Ecology from Environmental Law, 6(2):289-307, 1976, quoted in Futures by Design, the Practice of Ecological Planning p180, *“In human ecology, the way people interact with each other and with the environment is definitive of a number of basic relationships. Interaction provides a measure of belonging; it affects identity versus alienation, including alienation from the environment. The system of obligation, responsibility, and liability is defined through interaction. The process has become definitive of the public interest, as opposed to private interests which prosper in the spirit of independence.*
- 26) J. E. Lovelock, Gaia: A New Look at Life on Earth, Oxford University Press, 1979, J. E. Lovelock, <http://www.oceansonline.com/gaiaho.htm> How Does Gaia Work?

James Lovelock, in collaboration with another eminent scientist, the microbiologist Lynn Margulis, first explained the Gaia hypothesis as such: "Life, or the biosphere, regulates or maintains the climate and the atmospheric composition at an optimum for itself." Inherent in this explanation is the idea that biosphere, the atmosphere, the lithosphere and the hydrosphere are in some kind of balance -- that they maintain a homeostatic condition. This homeostasis is much like the internal maintenance of our own bodies; processes within our body insure a constant temperature, blood pH, electrochemical balance, etc. The inner workings of Gaia, therefore, can be viewed as a study of the physiology of the Earth, where the oceans and rivers are the Earth's blood, the atmosphere is the Earth's lungs, the land is the Earth's bones, and the living organisms are the Earth's senses. Lovelock calls this the science of geophysiology - the physiology of the Earth (or any other planet).

One useful analogy that has been proposed for understanding Gaia is the California redwood tree, *Sequoia gigantean*. These trees which stand in great groves along the northern coast of California and elsewhere can stand as high as 300 feet and weigh as much as 2000 tons. Some of them are more than 3000 years old.

Redwood trees are like Gaia because 97% of their tissues are dead. The wood of the trunk and the bark of the tree are dead. Only a small rim of cells along the periphery of the trunk is living. The trunk of the tree is similar to the Earth's lithosphere with a thin layer of living organisms spread across its surface. The bark, like the atmosphere, protects the living tissues, and allows for the exchange of biologically important gases, such as carbon dioxide and oxygen.

- 27) Encyclopedia Mythica <http://www.pantheon.org/articles/g/gaia.html>
- 28) The Bible, Koran and other books of field / cereal crop civilization start with the book of Genesis, which talks about Adam and Eve being created in the Garden of Eden. The Bible is a contradiction in terms as it starts here but continues completely at odds with its original premise, "And 'God', (derived from the Anglo-Saxon and other languages, the root-meaning of the name (from Gothic root gheu; Sanskrit hub or emu, "to invoke or to sacrifice to".) is either "the one invoked" or "the one sacrificed to." From different Indo-Germanic roots (div, "to shine" or "give light"; thes in thessasthai "to implore") come the Indo-Iranian deva, Sanskrit dyaus (gen. divas), Latin deus, Greek theos, Irish and Gaelic dia, all of which are generic names; also Greek Zeus (gen. Dios, Latin Jupiter (jovpater), Old Teutonic Tiu or Tiw (surviving in Tuesday), Latin Janus, Diana, and other proper names of pagan deities. The common name most widely used in Semitic occurs as 'el in Hebrew, 'ilu in Babylonian, 'ilah in Arabic, etc.; and though scholars are not agreed on the point, the root-meaning most probably is "the strong or mighty one." The word's only surviving non-Germanic relative is Sanskrit hu, invoke the gods, a form which appears in the Rig Veda, most ancient of Hindu scriptures: puru-hutas, "much invoked," epithet of the rain-and-thunder god Indra. Page 7, 'Word Origins' - "English belongs to the Indo-European family of languages, which consists of about 100 related tongues, all descended from prehistoric language of a pastoral, bronze working, horse breeding people, the Aryans, who inhabited the steppes of Central Asia about 4500 B.C. Scholars refer to their language at this stage as proto-Indo-European, or simply Indo-European. (From *READER'S DIGEST, Family Word Finder, page 351*) <http://wahiduddin.net/WhatsNew.rss> Richard Shelquist Longmont, Colorado. **God is a verb.**
- 29) An Illustrated Short History of Progress by Ronald Wright, 2006, Chaptre 2 *The Great Experiment, Someone fond of logical absurdities once defined specialists as "people who know more and more about less and less, until they know all about nothing." Many animals are highly specialized, their bodies adapted to specific ecological niches and ways of life. Specialization brings short-term rewards but can lead, in the long run, to an evolutionary dead end. When the prey of the sabre-toothed cat died out, so did the cat. The modern human animal - our physical being - is a generalist. We have no fangs, claws, or venom built into our bodies. Instead we've devised tools and weapons - knives, spearheads, poisoned arrows. Elementary inventions such as warm clothing and simple watercraft allowed us to overrun the whole planet before the end of the last ice age. Our specialisation is the brain. The flexibility of the brain's interactions with nature, through culture, have been the key to our success. Cultures can adapt far more quickly than genes to new threats and needs.*
- 30) [god](http://www.etymonline.com)  www.etymonline.com On Line Etymology Dictionary O.E. *god* "supreme being, deity," from P.Gmc. **guthan* (cf. Du. *god*, Ger. *Gott*, O.N. *guð*, Goth. *gub*), from PIE **ghut-* "that which is invoked" (cf. Skt. *huta-* "invoked," an epithet of Indra), from root **gheu(e)-* "to call, invoke." But some trace it to PIE **ghu-to-* "poured," from root **gheu-* "to pour, pour a libation" (source of Gk. *khein* "to pour," *khoane* "funnel" and *khymos* "juice;" also in the phrase *khute gaia* "poured earth," referring to a burial mound). "Given the Greek facts, the Germanic form may have referred in the first instance to the spirit immanent in a burial mound" [Watkins]. Not related to [good](#). Originally neut. in Gmc., the gender shifted to masc. after the coming of Christianity. O.E. *god* was probably closer in sense to L. *numen*. A better word to translate *deus* might have been P.Gmc. **ansuz*, but this was only used of the highest deities in the Gmc. religion, and not of foreign gods, and it was never used of the Christian God. It survives in Eng. mainly in the personal names beginning in *Os-*.

“And God said, Behold I have given you every herb bearing seed, which is upon the face of all the earth, and every tree, in the which is the fruit of a tree yielding seed; to you it shall be for meat.” Genesis Chapter 1-29, Scolfield Reference Bible, 1917, Oxford U. Press, NY.

The story of the Bible is a confused rendering of the end for our ancient indigenous story. The Bible is a turning point from the indigenous Garden-orchard of Eden in the first book Genesis and there-after continued failure by exogenous field/cereal croppers. The Bible's paradoxical concept of “God” directly reflects distancing from human nature as an intimate functioning part of bio-diversity and abundance of the orchard-field forest. The field/cereal cropper's invokes a god that is distant, severe and wrathful revealed in an excruciating story of turmoil away from the orchard forested earth.

Aryan people as horse-herders and domesticators, dominating field, animal and people, rather than cooperating with animal kind (as in the America's). The domestic spread of the horse facilitated the growth of militaristic exogenous exploitation of all resources that was able to overcome Orchard Food-Production Efficiencies through force. Politics of scarcity for control of populations began to be introduced. Wherever Indigenous Peoples enjoy forest plenty, then individuals, family, community and nations enjoy sovereignty and peace based in stable production without the need to exploit others.

God as a word has been expunged of its etymological meaning in most European dictionaries until recently, not because a history of this word root has not been available from texts written across millennia, but because churches have lobbied to keep god's word history unknown and therefore 'at a distance'. Without a tangible meaning, churches keep their followers beholdng to official interpretation and control.

Various Gods of history exemplify these changing attitudes. Apollo is a key God of the Greek and Roman pantheon of Gods representing the Sun, time, light, oracle, prophesy, Agriculture, vegetation, flocks and herds, Healing, beauty, Music, leader of the Muses and song, Colonisation, cities and laws, the Bow, Lyre, Tripod, Laurel, Palm and Raven-Crow. Apollo's identity as the Raven-Crow is interesting because these displaced forest dwelling birds are the thieves of grain and crops from field-agriculture. Innate-contradiction is considered inescapable by civilized peoples and therefore precipitates apathy to questions of cause and effect. In the vice of apathy, civilized people are unable to sort out even simple questions of social ecology. At the same time agriculture is the thief of Sylva-culture plentitude including the animal life therein. The history of Babylonia, Egypt, Greece, Rome, Europe and now America represents the invasion and destruction of rich Sylvan lands for pilfering of resources and the Civil rewriting of history with polytheistic gods or monotheistic God representing fragmented socially schizophrenic viewpoints and inherent oppression.

Gaia known as Earth or Mother Earth (the Greek common noun for "land" is *ge* or *ga*). She was an early earth goddess and it is written that Gaia was born from Chaos, the great void of emptiness within the universe, and with her came Eros. She gave birth to Pontus the Sea and Uranus the Sky. This was achieved parthenogenetically (without male intervention). Gaia from the indigenous period is part of being human, the earth, nature-kind or nurturing.

First Nations employed common descriptive terms such as the Ojibwe: manidoo, manidoog *pl manidoo* (*plural*: manidoog) meaning spirit and Gitchi manidoo meaning Great Spirit. When speaking about Gitchi-Manitou and other forms of this word, First Nations are using a descriptive term for a common experience that can be translated into any language. Every person remains in control of their own relation with the Great Spirit. As a term of speech, Gitchi-manidoo allows individuals to recognize the Great Spirit in each other and in all of nature. This 'religion' (derived from the Latin meaning 'to Relate') is based in the relationship of all people and all of nature.

ACKNOWLEDGEMENTS

Indigenous concepts of the importance of the orchard tree based living have come from a number of sources during the course of forty-one years of involvement. First Nation friends and contacts have been most generous with their time and hospitality:

- Products that I harvest or have harvested from trees I've met, which fed and afforded me their: SWEETENERS: maple & birch sap, honey from orchards and trees of every kind, NUTS: butternuts, walnuts, black walnut, hazelnuts, chestnuts, shagbark hickory, almonds, pine nuts, acorns, maple seeds, carob pods, GREENS: early spruce buds & gum, bamboo shoots, LEAVES: linden-leaf tea, cedar tea, eucalyptus leaves, FRUITS: ginkgo fruits & leaves, peaches, plums, cherry-plum, prunes, pears, many apple kinds (especially winter-banana), crab-apple, apricots, cherry, wild cherry & gum, juniper berries, loquat, fig, date, oranges, grapefruit, cumquat, avocado, pomegranate, prickly-cactus-pear, olives, banana, rosehips, grape-vine fruit & leaves, staghorn-sumac berries for seasoning and lemonade, tree-MUSHROOMS: bark mushrooms, woodchip mushrooms, FIBER: cottonwood seed fluffs for soft warmth, composted leaves to feed the garden, seedpod-toothpicks, birch bark for writing, containers, toy sails, toy canoes, SHELTER: from wind, sun and rain, wood of many kinds for building, tipi poles, running water brooks beneath, branch climbing, company with friends, anchors on steep slopes and down again safely, ECONOMY: to the trees that I've planted and watered, weeded, mulched, staked, pruned, picked & protected in return.
- Tree products apart from the above from stores that I use or have used: Hickory-nut, Cinnamon bark chunks and powder, Plantain, Kiwi, Chocolate from the Cacao tree, Melaleuca Oil from the Tea Tree, Chestnuts, Brazil nuts, Coconut, Mango, Persimmon.
- Climbing trees has been a sport and relief for me over the years. I enjoy moving up and looking down on things around me. I've built small structures as a child in trees, mostly as places to converse with friends in forest privacy. Sometimes when travelling through unknown forests, I climb trees to gain a perspective on the lands around me. Sometimes the best fruit and nuts are on branches that can be reached with a climb. When working in bear country, I usually take the precaution not being well versed in the ways and language of bears, to climb trees as a precautionary measure. Over many years of hiking in back country forests, I have never met an aggressive animal.
- To my father who had confidence in me and all the small things in life, to build houses, boats, to design, wire electric services, install plumbing, fix motors. To my mother, father and siblings who taught me the techniques of debate in family discussion.
- Robin Cappuccino, his father Fred a Unitarian Minister and mother Bonnie became my first models of learning from Community Service in the United Farm Workers' Grape Boycott, James Bay Cree Solidarity for maintaining living rivers, the

Provincial Association of Secondary Students PASS student union for human rights. It was with the writing of an article in the Student Newspaper and the subsequent forming of PASS that I learned to stand up and manifest the positive.

- The Cree People of James Bay helped me understand the strength & importance of trees for all of us, during the times I have been involved in Solidarity work with them since 1968 as representatives spoke at a Montreal courthouse.
- First Nation peoples have been most welcoming as I have travelled, bicycling and hitchhiking in visits to reservations across Canada and the USA. Flower Raynes helped me appreciate the importance of being an urban native.
- Ernie Crey, a Stolo activist from British Columbia shared with me his perspective on First Nations and immigrant peoples during a few full days of 1971 including the perspectives on Indian Residential Schools at our meeting at the Kamloops Residential School. Ernie later wrote the book Stolen From Our Embrace, with Suzanne Fournier.
- Fred Snyder a Mennonite friend from Deer Park on the Arrow Lake showed me Sinixt Pit-houses on the south-facing slope of Deer Park where I eventually bought a ten acre orchard land. I was first living across the lake in a tipi I had sewed and erected with Flower Raynes. Dukobour Sons of Freedom, Sobodniks such as George Podmorov helped me understand the urban roots of this Anabaptist movement which came to welcome refugees of war and economy. Quaker friends from Argenta on the Kootenay Lake joined in projects such as the Uranium Moratorium movement of BC during 1978 – 80 and taught me about their silent meeting circle tradition as well.
- My daughter Liv Breeze “Lifting up the branches of the maple tree” born in late winter 1985. I hope you are fulfilled in your chosen field. Thanks to Barbara Jamieson and Gilles St-Pierre who joined in the building and operation of INDIGENE Community Foods Grocery during the 1983 – 86 period at Sherwood Plaza in Beaconsfield.
- My partner Rebecca O’Kill and our son Adrian Oliver Brook of Sharing Truth in 2000 for all his head and handstands for teaching me how to relax in the process.
- Jim Banks who expands for me on the concept of Ecological Design through the Sustainable Development Association.
- Elders from Kaniien’kehaka Mohawk communities of Kahnawake, Tekahonwen:sere Melvin Diabo and Kanehsatake Kanatase, Raymond Gabriel, have been invaluable guides during the course of my coordination of the Eco-Montreal Tiohtiake Green Mapping www.eco-montreal.mcgill.ca and Tsi Tetsionitiotiakon Sustainability Rooted in Heritage Green Mapping <http://cbed.geog.mcgill.ca/WIP.html> ESRI’s work in supporting First Nations in GIS mapping www.nativemaps.org
- Kahentineta Horn of Mohawk Nation News from Kahnawake has helped me understand the importance of the Kaienerekowa as an integral part of the USA and Canada’s constitution and legal structure.
- Piel Maltais a Mic Mac elder first told me of the importance of the Continental Shelves during the glacial periods as prime sites of human habitation. Piel introduced me to the concept of Sylvalization during the 1990’s before being forced to flee from authorities in protection of a family member.
- Sun Bear from Washington / Oregon in the USA helped me understand native practices (1970’s. Return of the Sinixt people to the Kootenay / Columbia watershed.
- The EF Schumacher Society www.smallisbeautiful.org for giving me the opportunity and support to present a workshop on Indigenous Economy to the Local

Currencies in the 21st Century Conference www.localcurrency.org at Bard College in New York on the Hudson

- The Our Sacred Future Foundation has given me the opportunity to serve on its Board of Advisors www.oursacredfuture.org in the promotion of Indigenous Knowledge across Turtle Island.
- Working in the natural science and holistic health movement has brought me a wealth of knowledge about the things that matter most in life. Writing this paper is a joy but I must admit that the attention it deserves can't be afforded without economic relationship and currency.
- I write with the hope that ecologists will join with indigenous peoples in the rebuilding of intentional community based in the Law of the Great Peace, inclusive accounting and the cultivation of the orchard-forest. We can also join both Capitalist and Socialist forces together in this great economic development by accounting-for, employing and recognising the strengths of ourselves and our whole communities in the process of restoring the earth as an orchard garden.

ACCOLADES (Some responses to earlier editions)

Doug this looks interesting. if you travel through southern china around Xian where they have been farming for 6000 years its just what you find today, orchards with intensive vegetables with lots of floating covers and cold frames.

Roger Samson, Director 'Resource Efficient Agricultural Production' REAP Canada, Agronomist

Hi Douglas, Yes - I will be in Montreal from December 1-6, as an official delegate in the Climate Action Network (ENGOS) to COP/MOP. I have only been able to scan your text and picture, but I can see its application particularly for regions of the world where water decline and desertification are becoming real problems, and where a majority of populations live on subsistence farming and agricultural networks. I may be meeting with a country from West Africa, Burkina Faso, who is interested in this kind of approach. Any thoughts? Eddie Oldfield, Director New Brunswick Climate Change Hub, Environmental Health Inter-disciplinary Mapping of NB with Geographic Information System since 2000 www.nbhub.org

Hi Doug, Thanks for sending this very interesting piece. I have not read it all yet, but what I have read is very interesting. If you can send me the graphic I'd appreciate it.

We've been trying to bring back a lot of these concepts through the Kanata project as our community is quickly moving towards the suburbia model. In any case we're still plugging away at developing a neighbourhood that enables us to carry out traditional activities.

I'm writing you to see if you have any advice to offer regarding organic apple orchards. Our Longhouse is trying to create an organic apple orchard to re-connect our people with our foods and our environment.

Thanks so much, Lynn Konwaiatanonwes Lynn Jacobs - BSc(Env), MA(Env)
Environmental Technician / Scientific Advisor, Kahnawake Environment Protection Office
P.O. Box 1089, Kahnawake Mohawk Territory, Quebec, J0L 1B0

Howdy Douglas,

On to the subject of Ecocity Six in India, if it happens. If we were to have you there and you

see yourself as contributing something worth the time, effort, jet fuel & air pollution, I'd think we'd be looking for something like this as what you would do: let us know what the Native Americans have to offer the redesign of cities, towns and villages to bring them into balance with nature. No little assignment! But I'm sure there are a couple big principles there and of good example from which a few of those most likely to communicate well could be taken. Richard Register, Artist and Urban Planner, Ecocity Builders, Berkeley, California, Oakland Gaia Building, books Eco-Cities, Building cities in Balance with Nature, Ecocity Berkeley, Building Cities for a Healthy Future, Village Wisdom, Future Cities

Douglas, Thanks for connecting us all with the bigger picture--and the practical side of things. I'm slow to get to these e-missives, but I'll look over the attachment and get back to you. Been meaning to say I liked your letter a couple of Orions ago. Take care, Douglas, thank you for this connection. I very much like your 7 aspects of wampum. It's good to see these pieces being put back together.

Jerry Martien, Poet and Economic Historian, Shell Game, a True Account of Beads and Money in North America, 1996, Humbolt University. Arcata, California

Doug; I finished reading your document last night and I really think that this is your best work. It offers profound thought on many issues including agriculture, economics and society. It ties together your years of independent thought and places concepts such as participatory accounting into an accessible context. I've got to help you get this evolved into a publication and I am more than willing to help you expand the content and reinforce its many ideas. We'll talk... Regards, **Jim Banks, Ecological Designer, President, Sustainable Development Association, Montreal**

Greetings Douglas, In regards of the Orchard Agricultural Efficiencies write up; enriching and wise, I thought that it would not only serve the Climate Change Department, but would be quite beneficial for the Ecological Agriculture program at Équiterre. Therefore, simply to notify you that it has been forwarded to them as well. I salute you for this great piece ! Best regards, Olivier Kolmel Équiterre - *Ecological Building* Research and communications 2177, rue Masson, bureau 317 Montréal, (Québec), Canada, H2H 1B1 (in 2009 became Chair of the Canadian Environmental Coalition).

Email: ecobureau@equiterre.qc.ca Web: www.equiterre.qc.ca

Hi Douglas, I enjoyed reading your article. I found it very insightful.

Among many things, it made me consider the imagery of the tree to today's generation. In today's society we want instant results and lack patience. We have difficulties seeing long term effects. Global warming is something that many feel is in the future, so why should they do something today. Also, planting cereal allows a crop to rise in a year, whereas trees take many years to mature. Hopefully this will change. Perhaps trees can be part of this change, both mentally and physically.

I worked on a greening study of Harlem in NYC at the beginning of this year walking up and down every street with a map to note where more trees could be planted. A lot of areas in Harlem lacked trees. It made me reflect on what trees say. A tree says that there is a

commitment to the community. Planting a tree seed says that we live here, and that we will continue to live here. The young will watch the tree grow and the old will know that it will be there for those will take over the land when they're gone. As such trees can serve as powerful symbols of community commitment, environmentalism, and seventh generation thinking. Not so with the suburban lawn's grass roots which usually only serve a fenced in area and require tons of water and often many chemicals.

Also, I assume you are familiar with The Victoria Fruit Tree Project, in Victoria, BC. They have made a map of all the fruit trees in the area. Each year through volunteers they collect 20,000 pounds of fruit that might otherwise have gone to waste and distribute it in the community through foods banks etc. fruittree@lifecyclesproject.ca phone: 250 385 7425
Thanks for letting me read your work. All the best, Max Goldstein, Green Map System, Sweden

Sent: Sunday, October 23, 2005 11:39 AM Subject: Re: Orchard Agricultural Efficiencies?

Doug; First, I want to echo the other comments you have received - Nice work! You are clearly at the beginning of an important and timely social commentary.

I'd also like to recommend the following readings that you may or may not be familiar with:

Heiser, Jr., Charles B. (2nd Ed.).(1981). Seed to Civilization; The Story of Food. San Francisco: Freeman (a bit old but lots of good info)

Carolyn Merchant 04 Reinventing Eden; The Fate of Nature in Western Culture Routledge, NY

Orr, David W. 02. The Nature of Design; Ecology, Culture, and Human Invention. NY, Oxford.

Good luck. Keep me posted. Peter Graham, Community Economic Development, Concordia,

Hi Doug, What timing! This afternoon I am giving a lecture at McGill on : "Say no to windbreaks, say yes to profit alleys". It basically outlines the multi story/ permaculture design of food/ fruit as used in rows along field edges. Our little nursery at the farm has been growing beautifully so that we are ready to plant our first permaculture mixed fruit/ legume tree/ shrub plantings this fall and next spring. It will be a first recreation of what you are outlining. Stefan Sobkoviak, Agricultural Specialist, Orchardist, Lecturer, Montreal

From: cc@ccus.info Sent: Sunday, October 23, 2005 6:30 AM Subject: Orchard Agricultural Efficiencies?

Great job. Without a doubt, you are totally right. No doubt you have already read Jared Diamond's *Collapse: How Societies Choose to Fail or Succeed*. If not, be sure and do so. Tikopia Island in the South Pacific has practiced multi-level orchard forests for 3,000 years and he names a few other successes. Do you have a website? Attached is the rough draft of the book I am currently working on. A summary of possible economic efficiencies would match well with your summary of the efficiencies of multi-level orchards. Keep that in mind as you put your book together. Good luck.

Respectfully, J.W. Smith. The Institute for Economic Democracy <http://www.ied.info/> Order by phone: 888-533-1020 Within Arizona, please call 623.583.2518. All professor's copies free if used in class, otherwise, for professors, half price. \$5 S&H, \$6.50 for 2 bks, \$8 for 3 bks.

Economic Democracy: The Political Struggle of the 21st Century, 4th Edition, Sept. 2005, by J.W. Smith. (\$32)

Why? The Deeper History Behind The Sept. 11th Terrorist Attack on America, 3rd Ed, Sept.05, J.W. Smith \$28

Cooperative Capitalism: A Blueprint For Global Peace and Prosperity, 2nd Ed, Sept.05, by J.W. Smith. (\$28)

Millenium Dawn: The Philosophy of Planetary Crisis and Human Liberation, May 2005, by Glen T. Martin. \$28

Earth Federation Now: Tomorrow is Too Late, Sept. 2005, by Errol E Harris. (\$28)

World Revolution Through World Law: Basic Documents of the Emerging Earth Federation, Nov. 05, by Glen T. Martin (\$17.95)

Douglas,

Absolutely, insight-filled... Yes by the circulation of the sap from the roots to the leaf you have a thermo-pump. Now after 2 weeks as a delegate to the Conf. get your system integrated into the carbon credit credits and it will fly... Give Dianna Beresford Kroeger a call. She wrote the book [Arboretum America](#).. Ann Arbor press... She can be reached in Merrickville, Ontario.

Thanks for sharing.. Peter . . . and if you get a copy of my report I did for CMHCon energy efficient landscaping and the effects of their massive implementation, you can see the other factors as well, dust & germ capitation, transformation of pollutants etc.....its available free from the national library of research reports at CMHC...key in Booth Kettenbeil

Stay WONDER-FILLED

Peter Kettenbeil, Ecological Designer and Landscaper Planner (Post Expo 67 Ile Notre Dame etc. etc.), Geo-Thermal, Longueuil, Quebec

From: [Marcus](#) **To:** [Douglas F. Jack](#) **Sent:** Friday, October 21, 2005 8:12 PM
Subject: Re: Orchard Agricultural Efficiencies?

Thanks Douglas for the document, beautiful work! I printed it, but haven't yet had the opportunity to read it thoroughly, I'll give you some feed back as soon as i have given it a careful read; however, naturally, i am a full supporter of the concept and feel that the implementation of orchards, such as you have suggested, is definitely part of the equation leading to a more balanced life here on the 6th planet from the sun. The research you have performed is of great value to all of us and is an important step towards convincing the hard of ear (and heart) amongst us.

I am very sensitive to the tree roots movement as opposed to the grass roots, and i feel that you have coined a very strong linguistic term. So much truth lies hidden in our languages and the ways we employ them. The so called grass roots movements have definitely failed us & in my view, represent a liability for all progressive individuals searching for collective identity. grass roots advocates have certainly done their best, however, the very foundations of the movement are weak and crumbling.

The philosophical premises of the left (right or wrong, right or left), unconditionally 2 dimensional, has left most of us out in the cold, lacking in the very most basic elements of sustenance (physical or spiritual); in its patronizing stance, the left suggests that the population is suffering due to the prevailing ignorance of unschooled masses, and will oft suggest that proper university education could cure the ailing hoards. The left blithely ignores the inherent wisdom of the unhampered, unindoctrinated mind; gazing down with pity, from the dizzying intellectual heights of intelligentsia, at the hopeless masses, willing fodder for capitalist propoganda, the educated few inflate their impoverished egos with sterile utopias aimed condescendingly towards a craving humanity; imposing social housing, welfare checks, and food banks, almost always ignoring the strengths of those in need, disempowering their fellows, viewing them as deficits with so many lacks to fill, rather than assets full of resources.

While this same left powerlessly fingers its bankrupt pockets and flails its arms pathetically, due to its incapacity to actually help anyone (even less help themselves), the obvious answers to the imponderables are growing all around them, invisible to their book worn eyes, yet, emerging from the very soil they have alienated themselves from. While preaching in the proverbial desert of their own sowing, the actual, physical, seeds of replenishment elude their abstract spirits.

The simplicity of a cool breeze singing through the boughs of fruit laden trees, casting shade to the earth, and gracing our eyes with the sculptural beauty of ponderous growth, nourishing our spirits as

well as our bodies, mocks the infertile theories of an academia, lost in its quagmire of labyrinthian debates, desperately searching for its needle in the haystack (long forgotten what it might do with the needle, or why the haystack became necessary for the hiding of the needle, could it be a pine needle?...).

The 2 dimensionality of mono-crop field agriculture you compare with the orchards superior 3 dimensions is also an excellent image; though, I would add that orchards are actually 4 dimensional, in that they occupy a significant time line, spanning across human generations, and are therefore a much more stable food source. In fact trees are such a multi-faceted resource, incredibly generous to human needs; one would be hard pressed to catalogue all the wonderful arboreal gifts. One interesting example of the usefulness of trees is in France, particularly in Normandy; traditionally great rows of trees were planted around homes as wind barriers.

Unfortunately for many homes, the trees were hewn for one reason or another; the consequences became evident within several years, as the homes, bereft of their wind protection, began their inevitable erosion, quite often transforming them into quaint country side ruins. The ancient dwellings that have resisted the test of time almost always have their accompanying trees, intelligently planted to divert aggressive winds.

It is sad to note that city by-laws forbid the planting of edible fruit trees. Our city fathers, in their infinite wisdom and foresight, believe that they are protecting us from an onslaught of insect bites, and rampant infestation due to overfed vermin, not to mention avoiding feeding the hungry poor. Of course, as is common knowledge, most orchard owners spend most of their time fighting off throngs of rabid tree climbing rats while being ruthlessly stung by killer bees...despite these risks, I believe that an important step would be to reverse the anti fruit tree legislation in our city.

Perhaps some gentle lobbying of elected officials, coupled with some media back-up; who knows, maybe the grassroots movement might lend a hand! After all, there is plenty of room around the trees roots where grass can grow; protected from the violence of direct sun, in rich, moist soil...

Hope that I wasn't too wordy; see you soon, Marcus Macdonald, artist/architectural technician collective structures, Pt-St-Charles, Montreal.

Posté le: Jeu 1 Déc. à 17:08 **Mickaël PaysanBioFrançais** participant-e

Comment ne pas croire à l'agroforesterie? la crainte du long terme peut être. Le document de Mr Douglas Jack Aliments des Vergers – Efficacité des Productions Principes Pour Opérer une Terre Recouverte de Forêts, La Civilisation et agriculture de défrichage examinée est complet, il n'y a rien à avouer.

Je ferais donc juste un témoignage personnel. Il y a de cela 9 ans j'ai créé (en France) un verger conservatoire d'anciennes variétés de pommiers, en bio, ça va de soit. Dans les débuts j'y avais mis beaucoup de temps, d'argents et d'énergies, c'était beau comme un terrain de golf et donc vide de biodiversité, je me suis instinctivement tourné sur la permaculture (sans connaître cette pratique à l'époque). Au fil des années j'y ai apporté d'autres espèces fruitières et des fleurs vivaces. Je ne fait qu'un fauchage par ans et j'ai obtenu un couvert végétal spontané diversifié (comptant de nombreuses plantes médicinales) abritant une multitude d'animaux et d'insectes, notamment des insectes rares. L'équilibre végétal, animal et insectes c'est perfectionné par la permaculture. J'ai ainsi réduits

fortement le temps de travail au verger et n'est plus de problème avec des insectes ravageurs et je n'ai que très peu de maladie sur mes plantations. C'est un coin de paradis.

Petite anecdote, mon village s'appel Sacquenay, il a pour origine celtique le nom de Saquonitum qui veut dire "village dans les pommiers sauvages". Le lieu de plantation de mon verger c'est fait suivant mes disponibilités de terrain sans trop avoir eu le choix. J'ai découvert, depuis cette automne, des vestiges de constructions Gauloises dans la forêt qui borde mon verger. Pour finalement comprendre que ces vestiges sont les restes du village au temps des celtes et que les constructions qui ont suivies ce sont déplacées avec le temps. Ce qui fait que des milliers d'années après cette époque ou mes ancêtres vivaient au milieu d'une pommier sauvage, j'ai planté un verger en permaculture au même endroit. Le hasard n'existe pas...

Nous sommes ce que nous pensons. Tout ce que nous sommes résulte de nos pensées. Avec nos pensées nous créons notre Monde. Bouddha.

Mickaël Paysan, Bio Français participante Inscrit le: 27 Nov. 05 Messages: 6 Localisation: France

From: rsmith0225 [<mailto:rsmith0225@rogers.com>] **Sent:** Saturday, December 17, 2005 1:26 PM
To: eddie.oldfield@nb.lung.ca **Subject:** info

Hi Eddie Oldfield:

RE: Orchard Food Production Efficiencies

Thanks for the information. It makes for an interesting read. I wasn't quite sure what he / you were referring to when you said 'orchards'. For me this was a case of terminology getting in the way of facts. I am used to defining and working with orchards in a slightly different context, but what he describes in the document is exactly the kind of things that we have been trying to do in our multi-species plantations. The only semi-significant difference is that because we were 'forestry' and we had already caught grief for treading on the domain of agriculture, we had restricted ourselves to working with woody perennials. This is now pretty much a moot point. The plantations are established, and some 'other' species may find their way into the plantations (if you know what I mean).

There are a number of groups/organizations who could participate in expanding this idea in our region. We should talk about putting in a proposal that marries Kyoto (we already have a good rationale developed) with the Lung Assoc goals PLUS link it with rural community development, etc.

Later, and thanks again for the information.

Ron Smith, just retired from 27 years of service in the New Brunswick forestry civil service.

Hi Doug - Thanks for this. It's getting richer each time. I could see this essay as the basis of a book. Are you looking for a publisher for this material? You might want to approach New Society in Gabriola BC. It certainly deserves a wider audience.

Ray Tomalty, PhD, Urban Planner, Montreal

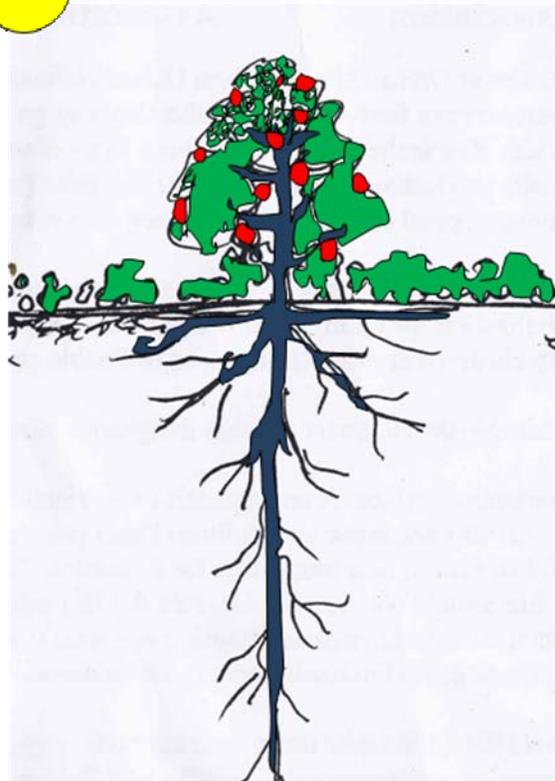
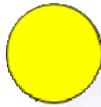
CONTACT: Come join us in this company of livelihood,

Douglas Jack, Ou Ee li Jay li,

Les Elements du design INDIGENE Elemental Design douglasf.jack@gmail.com
514-365-9594 9662 Jean-Milot, LaSalle, Quebec, H8R 1X9, Canada

1. Eco-Montreal Tiohtiake Green Map www.eco-montreal.mcgill.ca A Geographic Information System mapping of the greater Montreal region called Tiohtiake by the Mohawk Kanien'kehaka people. This region forms the northeast edge of the country of Kanien'keh.
2. Tsi Tetsionitotiakon Sustainability Rooted in Heritage is part of the Caring for Community project <http://cbed.geog.mcgill.ca/WIP.html> 105 Mohawks Place and site names are mapped in six different themes. Each name tells us important stories about ecology.
3. Green Map System www.greenmap.org is an international movement of over 500 communities who are describing the nature of their communities on maps.
4. Our Sacred Future Foundation www.oursacredfuture.org celebrates and promotes the Indigenous Knowledge, practices and technologies of on Turtle Island (North America) First Nations as a key for Sustainable Development.

Organizing from the “Tree Roots”



Avant la conquête illégal des Européens, les Mohawks, Wendats et Algonquins d'ici on eu des vergers en polyculture par tous l'île de Montréal, Tsi Tetsionitiotiakon. La productivité des vergers polyculture en 3 dimensions sont maintenant considéré par les scientifiques des Nations Unis à 100 fois (10000%) plus productive qu'agriculture' (Latin 'ager' = 'champ') en 2-D.

<https://sites.google.com/site/indigenecommunity/design/1-indigenous-welcome-orchard-food-production-efficiencies> Version française bref <https://sites.google.com/site/indigenecommunity/design/1-1-agriculture-de-defrichage-examinee>

Les rayons solaires sont absorbé et converti par le photosynthèse des feuilles de 92 - 98% en comparaison des rayons converti par l'agriculture de 2 - 8 %. Les racines d'arbres descendent la même profondeur que le canope monte en ciel pour pomper l'eau, minérales et aussi les nutriments développé dans le réseau raciner. A cause des vergers qui a réglé les eaux et sols, Montréal a eu 45 rivières passable par canot, quelques milles petits rivières qui ont alimenté les 45 grands et 10 lacs

<https://sites.google.com/site/indigenecommunity/home/mapping-ecological-indigenous-heritage>

Le corporation du développement durable en lien d'un Système d'information géographique SIG Tsi Tetsionitiotiakon Sustainability Rooted in Héritage (Durabilité enracinée en Héritage) a fait un cartographie en support des ouvrages de 35 aînés de Kahnawake et Kanehsatake en 2000 aussi que sont projet SIG Éco-Montréal Tiohtiake. Si les Européen ont immigré avec un politesse nous aurons un abondance énorme aujourd'hui en aliments, matériels, énergie, l'eau, air pur, faune, climat stable et paix entre nous.

Communauté Indigène www.indigenecommunity.info

Les photos de notre bac de compostage en planche (1/2 pouce) de béton pour évité les rôdent comme les rats, ratons laveurs, mouffettes, souris etc. <https://sites.google.com/site/indigenecommunity/design/5-cement-board-composters>