

Feeding People in Hard Times: What does permaculture have to offer?

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This article is on my website in a printable form.
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Introduction:

This article is intended for a number of readerships:

1. The staff and volunteers of hunger organizations. I would like to make you aware of some possible ways to increase food security for your constituencies. You may be aware of many of the social policies included here, but less familiar with the gardening methods promoted by permaculture.
2. The permaculture movement. Permaculture has three main ethics: a) care of people; b) care of land; c) dispersal of surplus. Permaculturists in general are well aware of the gardening techniques listed here, but many do not know of the range of social programs outlined here. This article hopes to stimulate more permaculture involvement in serving food at-risk populations.
3. The general gardening public. All gardeners will be well served to increase their social-justice awareness and gardening skills. This article aims to do both.

Part I discusses some of the food crises facing the general public and food at-risk populations in the US.

Part II lists some of the popular movements arising out of the public to address the food crisis. Resources and examples tend to be from the Pacific Northwest.

Part III briefly introduces permaculture and lists some practical, on-the-ground techniques to increase local food production. Where and how do we grow local food.

Permaculture is a design science for creating sustainable human habitats and societies. Working with nature to create beautiful, productive, healthy ecosystems. Building symbiotic relationships between flora and fauna as well as within human societies.

PART I

"All people deserve recognition and respect for their unique value." Growing Gardens, Portland, Oregon.

"Solutions to hunger and poverty can be found at the grass-roots level and the communities have the ability to provide for themselves if equipped with the proper resources."
National Hunger Clearinghouse.

"Social justice requires that all the peoples of the earth have an equal right and access to the resources of the earth; permanence requires that all future generations - an indefinite number of them - have the same rights too." Winin Pereira from the 1993 edition of his book "From Western Science to Liberation Technology". Earthcare Books, Bombay.

Ask any person who runs a food bank in the US and they will tell you that the handwriting is on the wall. There was a large surge in people showing up at food banks in 2007 and at the same time there was a reduction in food donations. 35 million people in the USA were on food aid in 2007. To paraphrase one writer: 'It isn't just the poor who are hungry, now it is working people too'. We know there is going to be a continuing wave of foreclosures in the next several years. Most financial institutions are predicting recession while other insiders in the financial industry are predicting another "Great Depression" or worse. Chances are we are going to see a lot more poor people in the USA soon. How are they going to eat in a society with escalating food costs and a reduction in food bank assistance? Overall food prices rose 20% in 2007 and some items even doubled in price. Bush's administration has reduced food aid and related programs. Even if the government decided to change its ways and provide sufficient funds to feed everybody, what kind of food would it provide them?

Urgency: Even more worrisome is that international food prices went up an unprecedented 40% in 2007 after a 9% increase in 2006. This is information from the UN FAO. Whole nations, such as Bangladesh, are now finding themselves in a food shortage. Food rioting is starting to happen in Mexico and other countries. Make no mistake. This is a deepening crisis which is likely to get much worse. 1 to 2 billion people could be facing starvation if this continues.

A world where people starve to death is no longer acceptable. Current world food production is enough to feed everyone. People starve to death not because there is no food available. People starve to death because they can't afford the food or it is withheld from them. This article outlines some of the steps that need to be taken to decentralize food production and make food production ecologically sound. Healthy food grown on healthy land by healthy people in a healthy society. Permaculture is in some ways the antithesis of globalization. Under globalization the markets are filled with food and things from all around the world with a mi-

nority being produced locally. In permaculture the markets are filled with food and things produced locally with a minority being imported from elsewhere in the world. Local resources used for local production, local consumption, and, dare we say it, locally-owned. Democratic production of the food supply is one of the requirements for a truly free citizenry. Almost everywhere has the capacity to be a garden of Eden with abundant healthy food produced by local gardeners and farmers. This article is generally addressed to the situation of low-income, marginalized, minority, and oppressed populations. People who are currently food at-risk. Many people involved in the local food security movement are motivated by a concern for future food supplies. This article is addressed to people who are concerned about current food supplies - eating today, this week, next month. They may be as much as 10% of the people in the US and between one and two billion people in the world as a whole. Hunger has a big constituency.

Today, many low-income people live in what are called "food deserts". A food desert has a lack of high-quality food. Food sources are often convenience stores and gas stations. The supermarkets there have limited choice, poor-quality food and high prices. Food deserts are located in inner-city areas and in numerous small towns and rural areas around the country. No wonder that most low-income people don't eat healthy food.

Food banks and other emergency food systems are an important part of the food supply for many people. Food banks give out varying qualities of food. Some of the quality is good but lots of it is not. Still, they have to do the best they can with what they have. The proportion of fresh fruits and vegetables at food banks has grown a lot in recent years as the food banks have been forging new alliances with local farmers. Another big source of food for the food banks are the cast-offs from the grocery industry, mostly out-of-date and damaged cans and processed food. This stream of supply has been greatly reduced in recent years because now much of it is sold through remainder grocery outlets. Another source in decline is the USDA food commodities program which buys excess production from farmers as part of its farm support program and gives it to the food bank networks. The value of the foods donated from this federal program has dropped from around \$250 million to \$150 million in the last two years because the market for farm products is robust and there is little surplus. In fact, the world's grain surplus recently hit its lowest point in 40 years. The recent development of using farm crops (corn, soybeans) to produce energy (methyl alcohol, biodiesel) is bidding the price of food out of the range of poor people. Since the energy crops are international commodities this has international as well as national repercussions.

Consider that the Montana WIC (Women and Infants) program has just decided that WIC food coupons cannot be used to buy organic food. Mothers are required to buy the cheapest, non-organic brand available. WIC's explanation is that they have to stretch limited funds and organic food is too expensive. Community hunger activists fought for years to get WIC to allow organic food. How

far is our society going to get in solving poverty if we feed people poor-quality, de-vitalized food? Unfortunately poor-quality, de-vitalized food is consumed by almost everyone, rich and poor alike. There are growing numbers of health food enthusiasts but cost and availability combined with relentless, agribusiness advertizing means most people continue to eat low-quality food. The vast majority of food consumed in the USA is highly processed, grown by industrial agriculture in de-mineralized soil and much of it carries a burden of pesticides, herbicides, additives and various other accumulative poisons. There is no doubt that the food supply is one of the main causes of our country's high rates of cancer, obesity and ill health.

Most people in the US are incredibly dependent on the system for their food supply. Never before have people been so alienated from their food's production. Current food production, processing and distribution is dependent on massive fossil fuel inputs. The food system is largely under the control of profit-minded, giant agribusiness corporations and dependent on a complex web of communications infrastructure. We have very little control of our food supply and most people only have several weeks of food on hand. This lack of local food production is dangerous for the populace. Food production itself is becoming increasingly disrupted by climate changes, floods, droughts, etc. Centralized food systems also give authoritarian governments leverage in controlling their populations. No wonder more people are getting concerned about local food security - and well they should. Our current food system is a recipe for disaster. In the face of all this, people are beginning to create solutions. Growing food locally is obviously a patriotic thing to do as well as for the personal benefits. This article lists some of the many ways communities are re-building local food systems and also hints at what permaculture has to offer.

Peak Food.

In October, 2006 I wrote an article on Peak Food and it is posted in a pdf format on my website. It contains 20 reasons why global food production has probably already peaked under current agricultural policies. It believe it may have peaked in 2004. If peak food is true and we are on the downward slope that means more people will be joining the food at-risk category. www.friendsofthetrees.net/peak_food.htm

Fortunately there are solutions to our food problems.

Permaculture offers the principles, methodology, strategies, techniques and knowledge of plant species which can help implement sustainable systems using local resources where-by poor people can feed themselves a diet far superior to what is offered them today. This article focuses on how permaculture can help feed the low-income and marginalized parts of the population, but what is proposed here will help all of society. It is in the interests of all sectors of society to create socially-just, sustainable, local systems of food.

Many grass-roots movements are arising to meet the interwoven set of food crises. Food banks, community hunger organizations, emergency food systems and related movements such as the urban gardening movement and community gardens. Remember the old saying that it is better to teach a person to fish than to give them a fish. Same with vegetables and gardening

Permaculture can be useful to all these movements be-

cause of its expertise in growing food and site-specific design. Permaculture can be practiced by anyone - poor, middle-class or rich and will improve the quality of life for all of them. Permaculture design can be applied at all scales including: yard, neighborhood, city and county levels; as well as small and large farms.

Food-related, social movements:

[Please note that the popular social movements (loosely defined) listed here often have little or nothing to do with permaculture per se though individual permaculturists may be involved.

- 1) Urban gardening movement.
 - 2) Community gardens.
 - 3) Youth gardens.
 - 4) Conversion of vacant land to food production.
 - 5) Food security and hunger organizations
 - 6) Small farmer proliferation and organization.
 - 7) CSA farms.
 - 8) Farmland preservation.
 - 9) Farmette rentals.
 - 10) Farm internship programs.
 - 11) Training programs in permaculture, organic, bio-intensive and other sustainable gardening and farming methods.
 - 12) Farmers markets.
 - 13) Eat local movement.
 - 14) Gleaning programs.
 - 15) Wildcrafting.
 - 16) Food banks
 - 17) Plant an Extra Row programs.
 - 18) Cost-sharing programs for permaculture design.
 - 19) Community education about healthy diets.
 - 20) Return to traditional diets.
 - 21) Food co-ops.
 - 22) Food buying clubs.
 - 23) Barter Fairs.
 - 24) Farm to cafeteria programs.
 - 25) School gardens.
 - 26) Community food processing.
 - 27) Food storage facilities in homes and neighborhoods.
 - 28) Training in conflict resolution, mediation and other skills that enable people to cooperate better.
- Each of these will be briefly addressed in Part II of this article.

These programs and movements are coming out of the general public. A movement involves large amounts of people, evolves simultaneously in many places, and is usually decentralized. There are community organizers and public support bases already growing in most of these fields. These solutions are already in progress and there are many models to learn from, internationally as well as nationally.

All of these movements are not linked up consciously yet, but the connections are growing. My feeling is that these movements will strengthen and coalesce and be able to create a better world. The obstacles are huge and

include the military/industrial/financial complex, their government lackeys, their control of mass media, drugs (pharmaceutical and illegal), and societal ignorance, apathy, selfishness, etc. However, I am optimistic because I feel there is a new force afoot in humanity. It is a force that is opening more and more hearts to make decisions based on love and intuition. One could say that the divine feminine principle is expanding people's hearts. If enough people open their hearts then wars, dictators and totalitarian governments will become impossible.

There is little doubt that hard times lie ahead. There is little doubt that the system will try to repress and stop popular movements and trends. Yet, the forces of common sense, self-preservation and a sense of justice are strong and growing. Society has seen a lot of inoculation of sustainable ideas in the past 40 years. There are millions of people in the US and around the world who are devoting their lives to creating alternatives in every facet of life; health, food, education, housing, energy, social systems, spirituality and so forth. The world wide internet is increasingly linking us up and making our positive solutions more known.

Three sources that indicate the size and breadth of the world's popular movements are:

Resource - Organization

World Social Forum

www.forumsocialmundial.org.br/

The World Social Forum is the most developed manifestation thus far of the global, social justice movement. The World Social Forum was founded in Porto Allegro, Brazil in 2001 and has become the world's largest international gathering of people's movements and NGOs. The 2007 WSF in Nairobi involved 75,000 people. It is the awakening of a new, decentralized society that could replace current, centralized, power structures. The World Social Forum is an open meeting place for reflective thinking, formulation of proposals, and interlinking for effective action, by groups and movements of civil society that are opposed to neoliberalism and to domination of the world by capital and any form of imperialism, and are committed to building a planetary society directed towards fruitful relationships among Humankind and between it and the Earth.

Resource - Book:

Blessed Unrest: How the Largest Movement In the World Came Into Being and Why No One Saw it Coming. Paul Hawken. 2007. Viking Press New York. 352 pages. A leading environmentalist and social activist's examination of the worldwide movement for social and environmental change

Resource - Website:

WiserEarth

www.wiserearth.com

WiserEarth serves the people who are transforming the world. It is a community directory and networking forum that maps and connects non-governmental organizations and individuals addressing the central issues of our day: climate change, poverty, the environment, peace, water, hunger, social justice, conservation, human rights and more. Their website lists 107,934 Organizations.

PART II

SOLUTIONS:

Popular Movements for Food Sovereignty

Here are introductions to a few popular movements (there are many more) which contribute to local food production systems that are socially just and ecologically sustainable.

“What is Food Sovereignty? Food Sovereignty is the RIGHT of peoples, communities, and countries to define their own agricultural, labor, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies.” Food First.

1) URBAN GARDENING MOVEMENT

The proportion of Americans who grow vegetable gardens is smaller than it used to be, but is still significant. 35% of US households (40 million households) have some sort of garden. Food gardening, fruit tree planting and edible landscaping should be encouraged and greatly expanded. Urban gardening movements are huge at the international level in both developed and developing countries and they provide us with many examples, models and lessons.

One of the more recent, and most famous, urban gardening booms was in Havana, Cuba after the Soviet Union fell in 1990, and the US embargo intensified. A lot of people were hungry. A large-scale gardening movement was launched and was very successful. What a lot of people don't know is that permaculture played a significant role. This was the result of a permaculture group, PGAN (Permaculture Global Assistance Network) based in Melbourne, Australia sending teams of instructors to Cuba in the beginning period of the gardening movement. PGAN established permaculture gardens, trained people and there was a significant technology transfer which was then implemented on a large scale. Today, Havana produces up to 50% of its food requirements from within the city limits, all of it is organic and produced by people in their homes, gardens and in municipal spaces. Read more about how and why the Cubans made this happen at The Power of Community website. They also have a popular film with that title. www.powerofcommunity.org

Another large-scale example is the former Soviet Union when the government, economy and agriculture all but collapsed. The already large extent of private gardens expanded and produced over half of total food supplies and is what kept many people from starving to death.

Permaculture has had an affect here in the Northwest but is very limited compared with the possibilities. Most

people have never heard the term permaculture, although many organic gardeners have some understanding of the term. The common garden practice of sheet mulching largely came from the permaculture movement.

We should also mention that suburban gardening also has great potential. Permaculture founder, Bill Mollison, has stated that the suburbs are the next agricultural frontier in the US because people, fuel, land, water and inputs are already concentrated there. US suburbs have similar population density to high-intensive subsistence farming areas in other parts of the world.

Once you start looking for resources on urban gardening an ever-growing plethora emerges. Below are listed a few. They will in turn lead you to hundreds more.

Northwest Resource:

City Farmer

www.cityfarmer.org

2043 Trafalgar Street, Vancouver, BC, Canada

(604) 685-5832

City Farmer has been focusing on urban agriculture for almost 30 years and their web site is a main portal into the diverse world of growing food in a city.

Northwest Example:

Backyard Farmer. Portland, Oregon.

www.yourbackyardfarmer.com

Donna Smith and her partner, Robyn Streeter started a business in Portland, Oregon to plant and maintain gardens in customer's yards. In their first year they took on 25 gardens and did all the work themselves. 2007 was their second year and their goal of 50 farms was easily achieved. Initially, they set up an agreement between the member and themselves as to what size plot will be planted and what food will be grown. Members choose from a list of vegetables and herbs they want on their mini-farm. Donna and Robyn then set up a time to prepare the farm space as per the agreement and visit on a weekly basis to plant, weed, and harvest. Farm size is determined by the amount of people they are growing for. Some are for single families and others are for groups of neighbors coming together.

National Resource:

Journey to Forever.

http://journeytoforever.org/cityfarm_link.html

Great list of books and resources for urban gardening and alternatives in general.

Global Resource:

Urban Agriculture Worldwide

www.urbanagricultureworldwide.com

Urban agriculture is any form of food and flora production that occurs anywhere in cities, towns and villages including that which occurs on their perimeter. A recent study by the South Australian Department of Primary Industries suggests that this agriculture represents up to 25% of Australia's total food production.

Global Resource:

City Farmer, Worldwide organization

www.cityfarmer.org/newpages.html#new

"Urban Agriculture Notes" is the world's most comprehensive news service on city farming from old books to the lat-

est films about inner city food gardens, photo collections, reports and theses, just about anything you can imagine related to growing food in the city.

Global Resource:

Resource Centres on Urban Agriculture and Food Security (RUAF)

www.ruaf.org

One of the larger international networks. Their Urban Agriculture Magazine can be read on the internet.

2) COMMUNITY GARDENS

There are an estimated 18,000 Community Gardens throughout the United States and Canada. Seattle's P-patch program administered by the Department of Neighborhoods is one of the countries most renowned community garden programs. Imagine it 10 times bigger! Almost every neighborhood can benefit from community gardens, especially low-income neighborhoods. Community gardens typically lease small plots of land to individual people. There might be from as few as ten garden plots at one site up to several hundred.

Northwest Example:

Seattle P-Patch Program

www.seattle.gov/neighborhoods/ppatch/

Seattle Department of Neighborhoods' P-Patch Program provides organic community garden space for residents of 70 Seattle neighborhoods. These programs serve all citizens of Seattle with an emphasis on low-income and immigrant populations and youth. Our community gardens offer 2500 plots and serve more than 6000 urban gardeners on 23 acres of land.

Northwest example:

St. Johns Woods Garden Project

www.janusyouth.org/what-we-do/urban-agriculture-services.php

Village Gardens includes the 7,000 square foot St. Johns Woods Garden Project which enables 30 families living 200% below federal poverty guidelines to grow their own food by providing seeds, tools, fertile land, water, and technical support. Housing Authority of Portland property managers at St. Johns Woods credit the project with reducing vandalism and increasing collaborative problem solving among residents.

National Resource:

American Community Gardening Association

1777 East Broad Street. Columbus OH 43203

1-877-ASK-ACGA, 1-877-275-2242

www.communitygarden.org/

This organization exists to serve community gardens and broaden community greening projects in general.

3) YOUTH GARDENS

Community gardens specifically for at-risk youth and street people. Training for eventual employment is an important facet of some programs.

Northwest Example:

Seattle Youth Garden Works

5700 Sixth Avenue South, Suite 207

Seattle, WA 98108

Phone: 206-632-0352

www.sygw.org

Seattle Youth Garden Works empowers homeless and under-served youth through garden-based education and employment. We are a market gardening program for youth ages 14-22 in the University District and South Park neighborhoods. Our goals are to connect youth to housing, health care, education, jobs and community.

Northwest Example:

Food Works

www.janusyouth.org/what-we-do/urban-agriculture-services.php

A youth employment program, Food Works engages 14-21 year olds in all aspects of planning and running an entrepreneurial farm business located on an acre of METRO land on Sauvie Island, a 70-member community give-away garden and the Big Apple Garden Club. Working side by side with Village Gardens' staff, community residents, local farmers, business owners and non-profit leaders, Food Works' Crew Members learn business, leadership, organic agriculture and other work skills. Crew Members also receive school credit for their work and are supported to transition into other employment opportunities and post secondary education.

Northwest Example:

Youth Farm

www.foodforlanecounty.org/Programs/Gardens/Youth_Farm.html

Established in 1998 in Springfield, Oregon, the Youth Farm is an innovative program combining hunger relief with youth services and education. The three-acre farm provides paying work, job training and education to at-risk teenagers throughout the spring and summer, and serves as an educational work site for local alternative schools and programs serving at-risk youth throughout the year.

4) CONVERSION OF VACANT LAND TO FOOD PRODUCTION.

Every locality has vacant lots, unused right-of ways, derelict land, brownfields, gullies, hillsides, edges, alleyways, parking strips, highway verges, and so forth. The amounts and proportions of these areas will vary in different localities. The US tends to have large amounts of un-used lands compared to densely populated countries like China and Japan where almost all tiny bits of land are under cultivation or management. Some of these places are better suited to native plant restoration or public space, but many can be turned into food production areas by the application of permaculture. Some of the more polluted areas need detoxification treatments first or may be confined to producing resources that are not ingested. There are many programs already doing these sorts of conversions, but they are a drop in the bucket of what is possible. Finding land for poor people to garden is not an easy task given current, private property attitudes but there is gradual progress. Various ways of implementing land reform are needed. If people are desperate enough various kinds of squatting arise.

Northwest Example:

Seattle Streetside Garden Contest

www.seattle.gov/transportation/planting_strip.htm

The city of Seattle in 2008 is expanding it's policy of en-

couraging gardening on the city's planting strips. Seattle Transportation and P-Patch Program are involved. Seattle Transportation runs an annual Streetside Garden Contest for the best gardens in parking strips and garden roundabouts.

5) FOOD SECURITY AND HUNGER ORGANIZATIONS

There are a wide diversity of organizations addressing hunger and food security issues. Here are some of the larger networks.

Northwest Example:

Portland/Multnomah Food Policy Council

www.portlandonline.com/OSD/index.cfm?c=eccja

The Food Policy Council is a citizen-based advisory council to the City of Portland and Multnomah County. The Council brings citizens and professionals together from the region to address issues regarding food access, land use planning issues, local food purchasing plans and many other policy initiatives in the current regional food system. A very active and well-respected regional example.

Northwest Example:

Growing Gardens

www.growing-gardens.org

Growing Gardens is a Portland-based organization that provides assistance to low-income people who want to grow their own food. It began in the mid-1980s. Since 1996, they've installed 485 home gardens in Portland. 40 to 50 a year with the options of traditional gardens, raised garden beds and container gardens. They support low income households for three years with seeds, plants, classes, mentors and more. Their Youth Grow after school garden clubs grows the next generation of veggie eaters and growers.

North American Resource:

Community Food Security Coalition

PO Box 209, Venice, CA 90294

(310) 822-5410

www.foodsecurity.org

The Community Food Security Coalition (CFSC) is a North American organization of social and economic justice, environmental, nutrition, sustainable agriculture, community development, labor, anti-poverty, anti-hunger, and other groups. The Coalition has 325 organizational members in 41 states, 4 Canadian provinces and the District of Columbia.

National Resource:

National Hunger Clearinghouse

www.worldhungeryear.org

Facilitating the exchange of information, resources, and ideas among organizations fighting hunger and poverty. The NHC believes solutions to hunger and poverty can be found at the grassroots level and that communities have the ability to provide for themselves if equipped with the proper resources.

Global Example:

Global Food Sovereignty Forum

Nyéleni, Mali, February, 2007

www.nyeleni2007.org/?lang=en

The beginning of their declaration starts: "We, more than 500 representatives from more than 80 countries, of organizations of peasants/family farmers, artisanal fisherfolk, indigenous peoples, landless peoples, rural workers, migrants, pastoralists, forest communities, women, youth, consumers and environmental and urban movements have gathered together in the village of Nyéleni in Sélingué, Mali to strengthen a global movement for food sovereignty."

Venezuela example:

A Vision of Food Sovereignty for Venezuela.

An article on food security initiatives in Venezuela

www.worldhungeryear.org/why_speaks/ws_load.asp?file=88&style=ws_table.

6) SMALL FARMER PROLIFERATION AND ORGANIZATION

Ever since the introduction of the tractor the number of US farmers has steadily declined. Until recently that is. The last several decades has seen growth in the numbers of small farmers. At the same time there has been a continued erosion in the number of medium-size farmers; while large-size farms have continued to consolidate, grow in size and increase their domination of the land base. There has been a huge growth in organic, biodynamic and other ecological systems of farming over the past 40 years. This constituency has become increasingly organized. We need an even larger increase in the numbers of small farmers. More start-up help for new farmers. Tax breaks for small farms and not for big farms. More help with direct marketing. How many ways can society come up with to support and increase the numbers of small farmers? A new surge of young farmers is currently underway.

Northwest Resource:

Washington Tilth Producers

www.tilthproducers.org

Washington Tilth is the main network of organic farmers in the state. They publish an annual directory/resource guide.

Northwest Resource:

Washington Sustainable Food and Farming Network

www.wsffn.org

A grassroots, statewide advocacy organization based in Bellingham. Their website includes a large Links section.

Northwest Resource:

Oregon Tilth

www.oregontilth.com

Oregon Tilth began the very first organic certification program in the US and is still an international leader in certification systems. Great monthly newsletter including a Spanish language section.

Northwest Resource:

FarmLink

www.cascadeharvest.org

The US is seeing the development of programs which link up retiring farmers with new farmers who can't afford to buy land and equipment through conventional channels. FarmLink is a Washington State program run by Cascadia Harvest Coalition.

7) CSA FARMS. Community Supported Agriculture. CSA farms is a new direct marketing tool for farmers which has seen rapid growth in the last decade. There are many types of CSA farms. A CSA is a way for the food buying public to create a relationship with a farm and to receive a weekly basket of produce. By making a financial commitment to a farm, people become "members" (or "shareholders," or "subscribers") of the CSA. Most CSA farmers prefer that members pay for the season upfront, but some farmers will accept weekly or monthly payments. Some CSAs also require that members work a small number of hours on the farm during the growing season. A CSA season typically runs from late spring through early fall. The number of CSAs in the United States was estimated at 50 in 1990. North America now has at least 1,300 CSA farms, with estimates ranging as high as 3,000. CSA farms (called Teikei) were first started in Japan in 1965 by mothers concerned about the rise of imported food and the loss of arable land. Today, millions of Japanese consumers participate in Teikei systems that account for a major share of fresh produce consumption in Japan.

Northwest Example:

Portland Area CSA Coalition (PACSAC). A CSA farmer support network. www.pacsac.org/

National Resource:

www.nal.usda.gov/afsic/pubs/csa/csaorgs.shtml
Good links for CSA info.

8) FARMLAND PRESERVATION

The growth of suburbs and development have resulted in significant losses of farmland near urban areas and increasingly even in remoter agricultural areas. Farmland preservation is one of the prerequisites for local food security. Farmland trusts, conservation easements and other private and public policies are preserving some farmland from development but annual loss is still high. Most regions have a group working for farmland preservation. They can always use more support.

Northwest Example:

The Farmbank Project

www.farmbankproject.com/
186 Tingle Road, Winlock, WA 98596
360-785-4927. winlockmeadowsfarm1@yahoo.com
Farmland preservation in Southwest Washington.

National Resource:

Farmland Information Center

www.farmlandinfo.org/washington/
The FIC is a clearinghouse for information about farmland protection and stewardship. It is a partnership between the USDA Natural Resources Conservation Service and American Farmland Trust.

9) FARMETTE RENTALS

Preservation without production doesn't feed many people. Some of this trust farmland can be leased out to landless individuals to do intensive production for market. This is similar to community gardens where people rent a small plot to garden for personal consumption, just at a larger scale. I would propose quarter-acre, half-acre,

one-acre, and two-acre farmettes. Small by industrial agriculture standards but plenty big for high-intensity production. The world has plenty of current and past examples of highly productive farming on small acreages. Have you ever visited a Hmong or other Laotian market garden in Seattle? Industrial agriculture cannot compete with labor-intensive farming when it comes to productivity as well as sustainability. For instance, a 100-acre dairy farm could be converted to 100 farmette rentals of 1 acre each. If a particular farmette site was paired with a particular neighborhood then suitable applicants can be selected from that neighborhood to rent the farmland at a reasonable rate with the proviso that the production is sold back in their neighborhood. In Seattle, it could be neighborhoods like Capital Hill, Rainier Valley, Central District, Beacon Hill, etc. Create a bus system to get the new farmers and community volunteers from neighborhood to farmettes. Fresh food grown by community members goes directly back to their neighborhoods with marketing support from grass-roots organizations. Some services have to be supplied by the overall farmette enterprise. For instance, a co-op tractor can do soil tillage at the beginning and end of the season for all the farmettes. Irrigation water can be supplied to the site as needed. An on-farm extension agent skilled in permaculture and high-intensity farming can assist renters in making informed decisions. A tool library and a book library on site would be helpful. Income to meet these costs would come from farmette rental fees as well as grants/donations from neighborhood or government sources.

Northwest Example:

Cloud View Ecofarm

A new project located in the Columbia Basin near Ephrata, Washington. The property includes 120 irrigated acres under cultivation. They offer leases on small plots of a half-acre to two acres for people to farm. Leases are open to Ecofarm members as well as people in the area. Cloud View Ecofarm is west of Moses Lake within 20 minutes of I-90. The land comes all tilled up, fertilized with composted manure, and irrigation. The farm is using permaculture in their planning. Contact Jim Baird. jimmbaird@aol.com

10) FARM INTERNSHIP PROGRAMS

Many people get their start in farming by interning. Most participating farms are small and use organic or sustainable methods. There are many types of arrangements but generally includes room and board in exchange for labor. The first program of the sort was started in England in the early 1970s. It was called WWOOF which initially stood for Working Weekends on Organic Farms. Now it usually stands for Willing Workers on Organic Farms. There are wwoof programs in dozens of countries now. Australia and New Zealand are both famous for their large, successful programs.

Northwest Resource:

Tilth Producers' Apprenticeship Placement Service

www.tilthproducers.org/placement.asp
This page lists organic farms in Washington State that host apprentices or interns or have openings for farm workers.

National Resource:

www.organicvolunteers.com

Willing Workers On Organic Farms and World Wide Op-

portunities on Organic Farms.

A website-based wwoof program, mainly USA but some international as well. Over 1,000 listings. 483 of their host farms include permaculture as a key word.

National Resource:

WWOOF-USA

PO Box 432, Occidental, CA 95465
831-425-FARM (3276) (voicemail)
info@wwoofusa.org
www.wwoofusa.org

World Wide Opportunities on Organic Farms. Many of the arrangements are for short-term stays. They publish a hard copy and online directory that lists hundreds of organic farms and gardens across the country in which each host describes their farm, location, crops, and general responsibilities.

North American Resource:

WWOOF CANADA

www.wwoof.ca/canada/content/start.html
Over 600 farm hosts, mostly in Canada but some in the USA. Their links page lists wwoof programs from around the world.

11) TRAINING IN PERMACULTURE, ORGANIC, BIOINTENSIVE AND OTHER SUSTAINABLE GARDENING AND FARMING SYSTEMS.

There are numerous individuals and organizations offering classes and training throughout the country. The Northwest is especially well-represented in this aspect. Seattle Tilth is a good regional model. The Master Gardener programs are probably the largest gardening training program. Permaculture design courses offer a way to get a firm grounding in permaculture.

Northwest Resource:

Seattle Tilth

www.seattletilth.org

[See also the resources in section 6) Small farmers organizations, and the permaculture resources at the end of the article.]

12) FARMERS MARKETS

Farmers markets are one of the best ways to get food from the growers to the consumers. We all know about the huge growth in farmers markets over the past several decades. According to the USDA, the number of farmers markets in the US grew from 1,755 in 1994 to 4,385 in 2006 with a total sales volume of \$1 billion in 2005. Imagine it growing ten times larger! That would really make a difference.

Northwest Resource:

Washington State Farmers Markets Association

www.wafarmersmarkets.com/

National Resource:

Nationwide list of farmers markets.

www.ams.usda.gov/farmersmarkets/map.htm

13) EAT LOCAL MOVEMENT

Many parts of the US now have buy local campaigns and programs. Most help link up farmers and consumers and publish farm guides. We now have such things as the 100-mile diet, locavores and slow food movement.

Northwest Example:

Puget Sound Fresh

www.pugetsoundfresh.org

Northwest example:

Buy Fresh, Buy Local Idaho Inland Northwest

www.ruralroots.org/Programs/BuyingGuide.asp

Northwest Example:

Edible Portland

www.edibleportland.com

A quarterly magazine celebrating the abundance of local foods season by season. Winter 2008 is Issue Number 9. 58 pages. This magazine shows that the local food movement in Portland, Oregon is already big and is really taking off. Interesting articles and lots of advertising. What is amazing to me is that it is just one of a network of 40 different EdibleCity magazines around the USA including Seattle and Vancouver, BC.

Northwest Example:

Gorge Grown Food Network

www.gorgegrown.com

This area includes the Washington and Oregon sides of the Columbia River where it cuts through the Cascade mountains east of Portland. Gorge Grown Food Network is a vibrant citizen group that works towards regional food self-sufficiency by connecting local farmers, food producers and consumers.

National Resource:

Hundred mile diet

http://100milediet.org

A local eating experiment you can do yourself. For one month (or one year) you only eat food that is produced within 100 miles of where you live.

National Resource:

Locavores

www.locavores.com/

www.locavores.com/how/links.php Their great links page. Locavores was first started in San Francisco with a goal of eating food from within 100 miles. The idea is rapidly spreading with various degrees of strictness on the idea of local. From 100 miles down to one mile or less. Speaking of strict locavores I personally know a Seattle man who went for a whole year only eating food from his yard. There was a large garden, fruit trees and a big blackberry tangle. He ate insects and trapped rodents. He was quite healthy at the end of the year. What was amazing to me is that he lived in an intentional community house and all the other residents helped themselves to the garden and fruit as well!

National Resource:

www.foodroutes.org/

Serving over 40 "Buy Fresh, Buy Local" organizations in the US.

National Resource:

Slow Food - USA

www.slowfoodusa.org

Slow Food USA envisions a future food system that is based on the principles of high quality and taste, environmental sustainability, and social justice - in essence, a food system that is good, clean and fair. We seek to catalyze a broad cultural shift away from the destructive effects of an industrial food system and fast life; toward the regenerative cultural, social and economic benefits of a sustainable food system, regional food traditions, the pleasures of the table, and a slower and more harmonious rhythm of life.

International Resource:

Slow Food - International

www.slowfood.com/

14) GLEANING PROGRAMS

A variety of gleaning programs have popped up around the US in recent years. Usually it involves urban volunteers gleaning farm fields after the farmer has stopped picking for market. The produce is usually donated to food banks. A new study from the University of Arizona in Tucson indicates that a shocking forty to fifty per cent of all food ready for harvest never gets eaten! There are large amounts of food waste and fruit which falls on the ground even in city limits. Urban gleaning is done by children and others on an informal basis. I know of people who have set up urban gleaning routes where they harvest fruit trees in people's yards (with permission). Formal programs would obtain greater utilization of the current resource.

Northwest Example:

Portland Fruit Tree Project

www.growing-gardens.org/portland-gardening-resources/fruit-tree-project.php

The Portland Fruit Tree Project organizes people in the Portland community to gather fruit before it falls, and make it available to those who need it most. We register fruit trees around the city, coordinate harvesting parties, and offer workshops in pruning & fruit preservation.

Northwest Example:

The Small Potatoes Gleaning Project

www.gleaningproject.org

Recovering Local Surplus Produce for Hungry People in Whatcom County. Bellingham is the largest city in Whatcom County in northwest Washington. 200,000 pounds of food gleaned in their first 5 years.

Northwest Resource:

Oregon gleaning network

http://oregonfoodbank.org/ofb_services/food_programs/gleaning/groups.html

Oregon has one of the most developed gleaning programs in the US. A list of 28 food gleaning groups from around the state and contact information.

15) WILDCRAFTING

Wildcrafting is the collecting of wild foods. The two food items which are most often wildcrafted are wild berries and mushrooms. Almost everyone in the maritime

Northwest wildcrafts at least a few blackberries every year. A good half of our common weeds are edible. Many are delicious and as a rule they are much more nutrient dense than store-bought food. Abandoned fruit trees are common in many places. There are many books available on edible wild plants.

Northwest Resource:

The Flavors of Home: A Guide to Wild Edible Plants of the San Francisco Bay Area. Margit Roos-Collins. 1990. Heyday Books, Berkeley. 221 pages. Lots of native and non-native plants are covered. Most of them are found north all the way into British Columbia.

Northwest Resource:

Wild Food Adventures

www.wildfoodadventures.com

4125 N Colonial Ave, Portland, OR 97217-3338

(503) 775-3828. mail@wildfoodadventures.com

John Kallas is one of the most active teachers about wild foods in the Northwest. Informative website.

National Resource:

<http://foraging.com/>

A great edible wild foods website with links to many people and organizations

16) FOOD BANKS

There a wide diversity of types of food banks, hot meal programs and other food relief agencies. Food banks not only distribute food to those in need, they often have some sort of educational component. They provide friendship and support networks for many people.

Northwest Example:

The Mother Earth Farm

Formed in May of 2000, the Mother Earth Farm is an eight-acre organic farm located in the lush Puyallup Valley. The Farm produces approximately 125,000 pounds of fresh fruit, vegetables, herbs and honey each growing season-all of which is distributed directly to local food banks and hot meal programs. Produce from the Farm is in the hands of food bank clients within eight hours of being harvested. It is a working farm that relies primarily on volunteers from a cross-section of the community to operate. The Mother Earth Farm incorporates an educational component for area youth and adults. Six local school districts and three universities incorporate Farm experiences into their curricula.

Oregon Resource:

www.oregonfoodbank.org/

919 Food relief agencies are part of this network.

Washington Resource:

www.northwestharvest.org

Northwest Harvest collects and distributes food to approximately 300 hunger programs in Washington State. Includes food bank information, volunteer opportunities, etc.

17) PLANT A ROW FOR THE HUNGRY PROGRAMS

A nationwide grassroots effort encouraging gardeners to plant an extra row of produce to donate to local food banks.

Northwest Resource:

Oregon's "Grow an Extra Row" program

http://extension.oregonstate.edu/news/story.php?S_No=450&storyType=garde

Oregon's "Grow an Extra Row" program is an offshoot of the national "Plant a Row" program begun by the Garden Writers of America. It started with the efforts of Master Gardeners in Oregon's Jackson and Josephine Counties and has grown statewide since 1998. 4-H clubs have grown special gardens to supplement food boxes around the state. For information about the nearest location of a food distribution facility, call the local Master Gardener program at your local county office of the OSU Extension Service, or the Oregon Food Bank in Portland, 503-282-0555, or toll free at 1-800-777-7427.

National Resource:

Plant A Row for the Hungry Program

www.gardenwriters.org/Par/index.html

A source for planting information and other resources.

18) PERMACULTURE DESIGN COST-SHARING

Cities and local governments should create cost-share programs to finance permaculture designs for homeowners and land-owners. This would be a cost-effective program such as exists for insulating houses and installing double-pane windows and energy conserving lights. There is also some similarities to cost-share, forest management plans. Permaculture design would help families make their land more productive and reduce their draw on cities' services. Installation of systems would also provide meaningful employment opportunities. This is a program idea that hasn't been put into practice yet that I am aware of. Anyone interested in pursuing this idea is invited to contact Michael Pilarski.

19) COMMUNITY EDUCATION ABOUT HEALTHY DIETS

Whole foods, grown in healthy, mineral-rich soil lead to good health. Processed foods and foods with low nutrition levels lead to ill-health. Information on healthy diets is available but there is lots of competing information on what constitutes a good diet. There are different body types and blood types to consider. There is no one perfect diet, but anyone who makes a serious study of diet and nutrition shudders at what most people are eating. Raw foods and fermented foods are positive dietary trends which should be promoted. The trick is making a healthy diet affordable to people on the low end of the income spectrum. Home food production, bulk buying and direct farmer-to-consumer sales are all parts of what can make a healthy diet affordable to the poor.

National Resource:

The Weston A. Price Foundation

www.westonaprice.org/

The Foundation is dedicated to restoring nutrient-dense foods to the human diet through education, research and activism. It supports a number of movements that contribute to this objective including accurate nutrition instruction, organic and biodynamic farming, pasture-feeding of livestock, community-supported farms, honest and informative labeling, prepared parenting and nurturing therapies.

20) RETURN TO TRADITIONAL DIETS

In the last ten years there have been a growing number of programs and initiatives by Native American, Hawaiian and other ethnic communities to return to traditional foods. This is done in response to a perception that the modern diet is bad for the health of the people and that a return to more traditional foods and diet will improve their health. More and more people are seeking historic roots in healthier cuisines.

Northwest Resource:

Renewing Salmon Nation's Food Traditions.

Gary Paul Nabhan. 2006. RAFT. 66 pages. \$5.95

This book introduces a RAFT list of food species and heirloom varieties with traditions at risk and in need of recovery in the Greater Pacific Northwest. This book is the result of a meeting of food activists, chefs, ethnobotanists, farmers, fisherfolk, food historians, orchardists, conservation activists and nutrition educators. It covers domesticated crops, sea foods and wild foods. If you want to eat local, this is a great book because it details food that is unique to salmon nations, including heirloom varieties that originated here. Value our local foods and keep them alive. As Nabhan says, "Eat it, to save it".

National Resource:

RAFT, Renewing America's Food Traditions

Center for Sustainable Environments

Northern Arizona University,

PO Box 5765, Flagstaff, AZ 86011-5765

928-523-6726. Gary Nabhan,

www.environment.nau.edu/raft

21) COMMUNITY FOOD CO-OPS

The food coop movement grew and thrived during the 1970s and 80s. Some went out of business in the 1990s, but many are still alive and thriving and new ones are starting. Most of them harbor a strong community network. Most of them give preference to buying from local farmers. We need more coops and less supermarkets.

National Resource:

Coop Directory Service

www.coopdirectory.org/

1254 Etna Street, St. Paul, MN 55106

651-774-9189. thegang@coopdirectory.org

22) FOOD BUYING CLUBS

Food buying clubs are one of the best ways for consumers to lower food prices by combining ordering power and buying in bulk. Buying clubs usually buy from the same distribution networks that supply natural food stores. Buying clubs could also make bulk buys from farmers. Sort of like a neighborhood CSA, but instead of the farmer dropping off a box (or a bag) for each individual person/family, the farmer can deliver a large quantity at one dropoff spot which the buying club splits up into the personal orders. This is a very attractive proposition for small farmers. This can offer a wholesale price to the consumer and still be a good return to the farmer. For instance, this past fall I had 500 pounds of winter squash I wanted to sell and was driving to Seattle, I wished I could call a Seattle buying club switchboard and find a buying club to purchase the squash.

By shopping wisely and buying in bulk it is possible to feed yourself a healthy diet for much less money than shopping in retail stores. Personally I buy many of my basic foods in bulk. For instance I buy oatmeal in 50-pound sacks. When I had a family I purchased honey by the 5-gallon bucket. Bulk buying enables low-cost meals.

Northwest Resource:

Azure Standard

79709 Dufur Valley Road, Dufur, OR 97021

541-467-2230

www.azurestandard.com

Azure Standard is a wholesale food company supplying buying clubs around the Northwest. They have a \$400 minimum order per dropoff if within 3 miles of their regular delivery route.

National Resource:

Starting a Buying Club

www.coopdirectory.org/

[#What%20Is%20A%20Buying%20Club?](#)

Information on how to start a buying club.

23) BARTER FAIRS

Barter fairs are like a giant farmers market, craft fair and flea market all rolled into one. They generally serve a rural areas. They are direct marketing, weekend campout events. they are fun, community-building events which bring many people together year after year. There are currently about ten barter fairs, all in the rural Northwest: north-central and northeast Washington, Montana and southwest Oregon.

Northwest Example:

Okanogan Family Faire

www.okanoganfamilyfaire.net

Near Tonasket in north-central Washington. The oldest (started in 1974) and largest barter fair. Attendance in recent years has been as high as 10,000 people. Their website is currently under reconstruction as of late 2007.

Northwest Resource:

Barter Faire Online Community

www.barterfaire.org/blog/bfblog.html

This site has dates and information on most of the barter fairs.

Northwest Example:

Hope Mountain Barter Faire

<http://hopemountainbarterfaire.org>

Southwest Oregon location.

24) FARM TO CAFETERIA PROGRAMS

Local farms supplying schools, senior centers, and other public facilities. This concept is spreading in public schools. The city of Rome, Italy, recently overhauled the school meal service for its 140,000 students. Ingredients for all school meals are now seasonal, organic, regionally and/or fair trade-produced, and cooked from scratch in school kitchens. Wow!

National Resource:

Community Food Security Coalition.

www.foodsecurity.org

CFSC organizes the National Farm to Cafeteria Program.

National Resource:

www.reinvestinginamerica.org/faqs/ria_063.asp

Many farm-to-cafeteria resources can be found here.

25) School gardens.

Almost every school should have a garden where the students learn about gardening and growing food. There are tens of thousands of school gardens around the world, but not anywhere enough of them. The US had hardly any school gardens until recently, but now it is a rapidly growing movement. Permaculturists have started school gardens in many countries. In some cases the school gardens provide an important part of the students' diet.

Northwest Example:

Permaculture Classroom Project, Hood River, Oregon

www.kidsgardening.com/school/registrydetails.taf?id=3948

A Northwest example of a permaculture school garden is that of Michael Becker who teaches sixth grade in Hood River, Oregon. He directs the Permaculture Classroom Project, a hands-on approach to teaching math and science using Permaculture and sustainability science concepts. With his students, they have developed extensive habitat gardens and food systems on the schoolyard.

National Resource:

www.kidsgardening.com

26) COMMUNITY FOOD PROCESSING

There are many methods of home-scale, food processing, but there is also a need to establish neighborhood, food-processing facilities. Community commercial kitchens have been set up in dozens of US cities in the last decade, sometimes as part of "business incubator" programs.

A historic example is the now-extinct "custom canneries". In 1973 and 1974, I worked at one of the last custom canneries left in Washington state, the Toppenish Custom Cannery in the Yakima valley. Each day during the growing season, the cannery was filled with a bedlam of hundreds of people peeling, slicing, dicing and pureeing all kinds of fruits and vegetables they had grown, gathered or bought locally. They filled cans with their own products and recipes. Our small cannery crew heated the cans (and contents), ran them through the lidding machine and then pressure cooked the cans for specified times depending on the contents. Some things like salmon and meats were cooked longer. The customers picked their cans up the next day when the cans had cooled down.

The noise was deafening and the languages were many. The customer base included Hispanics, Indians (half the Yakima valley is on the Yakama Reservation), Filipinos, Japanese, African-Americans, Southerners and all kinds of whites. It was a real melting pot of a crowd and it was all focused on food. Local food for local people. There used to be about 50 custom canneries around the state in the mid-1900s. There is not a one left. Perhaps it is time to start some new ones. Perhaps they can use glass canning jars as well as metal. Perhaps they can include drying facilities as well.

Northwest Example:

The Cannery Project

Emergency Food Network

3318 92nd Street South, Lakewood, WA 98499

Tel: 253-584-1040.

The Cannery Project was begun in 1996. The purpose of this project is to can and re-pack fresh and frozen foods. This product is then distributed to local food banks, increasing the shelf life of otherwise perishable goods and reducing the need to purchase canned food. This project relies heavily upon volunteers from local service clubs, universities and businesses. By the end of 2005 this project surpassed production of one million cans since its inception.

National Resource:

The National Center for Home Food Preservation.

www.uga.edu/nchfp/

A source for current research-based recommendations for most methods of home food preservation.

27) FOOD STORAGE SPACES IN HOMES AND NEIGHBORHOODS

Every year I personally store hundreds of pounds of potatoes, carrots, squash, beets, onions, garlic, apples, pears, parsnips, etc. The ideal storage for onions, garlic and squash is warm and dry. The ideal storage for roots and fruits is cold and humid. Root vegetables and fruits should be stored separately. Some of my residences have had root cellars and pantries which provided the range of desired storage conditions, but some did not. Those were the times I wished there was some sort of community food storage facility nearby.

We need a program to retrofit homes with storage places to enable people to buy food in bulk and store it properly. Apartment buildings and other group housing can create food storage areas which tenants can use. In some cases neighborhood food storage facilities can be built (or existing structures remodeled) to enable people to store food in proper conditions. This could be akin to public freezer lockers where people rent small freezer spaces and have a key. This concept can be extended to separate root cellar lockers.

28) TRAINING IN CONFLICT RESOLUTION, MEDIATION, FACILITATION AND OTHER SKILLS THAT ENABLE PEOPLE TO COOPERATE BETTER.

There are numerous organizations and private consultants doing this kind of work. There are an increasing number of good books available.

Northwest Resource

Sustainable Communities Network

www.sustainable.org/creating/mediation.html

Alternative dispute resolution is a tool for resolving conflicts within a community, and mediation is used in the workplace and in institutions to help individuals find common ground and peaceful solutions to problems. This website provides links to many resources that community organizations can employ.

This list of 28 social movements and programs all contribute to increased food security and food sovereignty. Dozens more could be listed. This is not an attempt to make a thorough list. 77 examples and resources are listed here with contact information. Thousands more could be listed.

End of Part II.

PART III

Aspects of Permaculture and some practical techniques.

The word 'Permaculture' was originally coined in Australia by Bill Mollison and David Holmgren in the mid-1970's. The word "permaculture" itself came from the notion of establishing "permanent agriculture" or "permanent culture. Over the last 30 years, permaculture has grown to become a global grassroots movement involving hundreds of thousands of people. Permaculture offers a huge storehouse of solutions, strategies and practical techniques. If permaculture was implemented on a planetary-wide scale in cities, farms and homes the world would become a garden of Eden.

Permaculture is a design science to establish sustainable human settlements. Permaculture has a code of ethics, a set of principles, a design methodology, and draws on numerous strategies and techniques from around the world and throughout history. Permaculture is the premier design system for sustainable food production. In addition to the plant landscape, permaculture also considers transportation, energy, buildings, water supply, community economics, and the social fabric of life. Every type of habitat can be put to good use whether dry, marshy, rocky, sandy, clay, riparian, seaside, urban, and so forth. One of the goals in permaculture is to increase the number of habitats on site to enable a wider range of plants to thrive.

Permaculture teaches how to design productive and beautiful yards, farms and properties at the individual property scale. Permaculture principles and methodology can be applied anywhere in the world. Each site is unique and each client is unique, thus each permaculture design will be different.

Intensive vegetable gardening techniques can quickly produce large amounts of food in small spaces, but intensive gardening is not for everybody or everywhere. Permaculture emphasizes the creation of low-maintenance, self-reproducing ecologies. The proportions of native plants, non-native plants, long-lived perennials, fruit trees, food plants, etc is determined by the client's goals and nature's dictates.

Restoration of native habitats and native species is a component of permaculture. We can assist nature to regenerate healthy biospheres. This means soils get richer, forests increase, trees get bigger, biodiversity increases, the web of complexity of relationships increases, more oxygen is produced and more carbon is stored. At the same time, the productivity of the landscape to meet human needs dramatically increases. Human landscapes which have permaculture applied to them will look wilder, be wilder, be more bio-diverse, be more productive, be more beautiful and will run itself to a large extent. All this for less work in the long run.

One of the key premises of permaculture design is to minimize outside inputs. The inputs of one part of the system are met by the outputs of other parts. More cycling of nutrients, energy, water, etc. The site not only uses less inputs but the outputs greatly increase including food and other useful products, as well as fulfilling

environmental functions such as wind abatement and shade. An additional goal is aesthetic beauty, color, fragrance and outdoor living space. Permaculture emphasizes low-maintenance, perennial plants (less work); and, depending on the client, varying amounts of intensive gardens. Individuals and families achieve greater self-sufficiency and collectively the region as a whole does.

A Few Strategies & Techniques

- P-1) Composting & woody biomass.
- P-2) Increase food plant diversity.
- P-3) Rooftop gardens.
- P-4) Utilization of walls and vertical spaces.
- P-5) Sidewalk trellises.
- P-6) Water harvesting, roof catchment systems.
- P-7) Parking lot overstories.
- P-8) Nitrogen-fixing plants.
- P-9) Sheet-mulching.
- P-10) Grow BioIntensive gardening.
- P-11) Garbage pit gardens.
- P-12) Bio-remediation.
- P-13) Myco-remediation.
- P-14) Integrating livestock.
- P-15) Seed and plant propagation networks.
- P-16) Native plant restoration.
- P-17) Native plant restoration & wildcrafting.
- P-18) Forest gardens.

This list of eighteen was made with urban gardeners in mind. There are several hundred more which could be listed such as beekeeping, double-dug beds, wind power, aquaculture, mini-ponds, herb spirals, creating wildlife habit, container gardening, winter gardening, agroforestry, grey water, hedgerows, suntraps, etc, etc. These are just a few of the strategies and techniques in permaculture's tool kit. Permaculture is more than just the sum of the elements in the system, it is also arranging them in proper relationship to each other to maximize beneficial inter-relationships.

P-1) COMPOSTING & WOODY BIOMASS

Permaculture calls for the full utilization of organic matter. The percentage of organic matter generated in our cities which ends up being productively used is small. This is worse than throwing money away because money is losing its value, but organic matter is becoming more valuable. The recycling and composting of all organic matter should be encouraged including grass clippings, prunings, leaves, and kitchen waste. Seattle is a national leader in composting but there is more to do, especially in regards to the woody debris generated from storms, yard maintenance, land clearing, etc. All wood is fertilizer to the ecosystem.

What is Biomass? Biomass is the sum total of all living or once-living material. It includes all live plants from grasses to trees plus dead plant material, snags, roots, duff, humus, soil microorganisms and animals. Biomass is like money in the bank. It pays back over time plus interest. Permaculture and related disciplines have come up with lots of productive ways to utilize woody biomass for gardening, farming and ecological uses. Some involve chipping and others do not, such as the hugelkultur systems developed in Germany which create raised beds using large to small woody debris. The recent discovery of Terra Preta soils in the Amazon basin also show us a way to use charcoal as a soil fertility input. The work of the Frenchman, Jean Pain,

shows us how to generate large amounts of hot water (energy) by composting shredded, brushy material.

Northwest Example:

The Master Composter/Soil Builder Program

www.seattletilth.org/resources/articles/mcsb

One of the leading programs in the US.

Resource:

www.permacultureactivist.net/PeterBane/Jean_Pain.html

Jean Pain, energy from woody compost

An article from the Permaculture Activist which is a great introduction to Jean Pain's work.

Resource:

Terra Preta

http://en.wikipedia.org/wiki/Terra_preta

Great rundown on Wikipedia of an Amazonian indigenous technique to build fertile soils utilizing charred plant material.

P-2) INCREASE FOOD PLANT DIVERSITY

There are around 200,000 plant species in the world. The number is going down rapidly. About 4,000 species are native to the Maritime Northwest. About 1,500 species have naturalized or gone weedy in our region. Northwest gardeners have about 10,000 useful plant species to choose from, of which at least 1,000 species are edible. Increased food plant diversity means increased food choices, a more diverse diet (produced locally) and hedges our bets during climate changes. Permaculture has lots of expertise in plant diversity, including perennial food plants.

Global Resource:

Plants For A Future

www.pfaf.org/

Plants For A Future is a resource centre for rare and unusual plants, particularly those which have edible, medicinal or other uses. You can search their database of 7300 edible medicinal and useful plants.

P-3) ROOFTOP GARDENS

Rooftops are a substantial part of urban landscapes and are found wherever people live. Many of these rooftops can be gardened either for the purposes of food production or for the many other environmental and urban greening benefits they provide. Vines especially lend themselves to rooftop and wall gardening where soil depth is adequate. Some rooves have a southern exposure. They have good frost drainage. Dogs and cats can't get at them (but birds and squierrels can). Weeds and slugs are less of a problem. Much of the experience on this topic is currently from cities in Europe and the two-thirds world. Germany is the most advanced country in the world in regards to rooftop gardening but only a small amount of their publishing is translated. St. Petersburg, Russia is one of the world's largest centers of rooftop food culture (necessity being the mother of invention in this case).

There are three major types of rooftop gardens.

- 1) The plants (usually vines) are rooted in the ground and grow up the walls and onto the roofs.
- 2) The rooting medium is part of a layered system laid on top of the roof.

3) Plants are grown in containers on the roof.

In the latter cases, care has to be taken not to overload the building's structural support nor to cause leaks in the roof. The deeper the rooting medium the bigger the plants that can be grown and the more surface area they can cover.

Resource:

Planting Green Roofs and Living Walls. Nigel Dunnet and Noel Kingsbury. 2004. Timber Press, Portland, OR. 254 pages. International overview and historical development. Food production is only a minor component of the rooftops surveyed but many techniques are applicable.

Example:

Green Roofs for Healthy Cities

Attn: Steven Peck

406 King Street East

Toronto, Ontario, M5A 1M1, CANADA

416-971-4494. SPECK

speck@greenroofs.org www.greenroofs.org

Example:

The True Nature Foods 'Rooftop Victory Garden' for localized agricultural production was begun as Phase I in 2006. This project received a 'City of Chicago Green Roof Grants Program 2005: Residential and Small Commercial Buildings' grant from the Department on the Environment toward realization of the vegetated roof, and has become a 'poster project' of sorts for the grant program. Species planted in fall 2006 include buckwheat, burdock, comfrey, Jerusalem artichoke, and artichoke, which were selected for their ability to provide food, fuel, fiber, encourage human health, and help build healthy soil. Species planted in 2007 include herbs such as mints, rosemary, oregano, tomatoes, potatoes, beans, and squash. The city of Chicago has set a goal of being a national leader in city greening and rooftop gardening.

Example:

Brisbane (Queensland, Australia) is the first city in the world to include both urban agriculture and green roofs in an action plan to meet predicted global climate change challenges. Further information:

Geoff Wilson, Green Roofs Australia Inc.

32 David Road,

Holland Park, 4121, Queensland, Australia.

www.greenroofs.wordpress.com will report on the vermiculture, aquaponics and green roof research project being conducted in Brisbane.

P-4) GARDENING ON WALLS

Walls of houses, garages, sheds, office buildings, and retaining walls offer fruitful and fascinating spaces to grow useful plants. This can include espaliering fruit trees along walls, growing fastigiate (upright/narrow) trees & shrubs, and by growing vines. Vines are generally grown up trellises so that they don't negatively impact the building. The longest vines such as wisteria, grapes and kiwifruit can grow up to 90 feet long. Species exist for every exposure. More light equals more food productivity. Permaculture looks at every wall of every home carefully to assess it's potential for improving the life of the inhabitants by providing food, fragrance, beauty, oxygen, sound buffering, reduced heating and cooling bills, etc.

On many urban properties the square footage of wall surfaces is larger than square footage of soil surface (lawns, etc). Wall area is typically 3 to 4 times the size of roof area. Walls have an additional advantage over rooftop gardens in that plants can usually be rooted in the ground. Some walls do not have soil at their base and containers can be used to grow the plants.

P-5) SIDEWALK TRELLISES

Build trellises over sidewalks and plant them to vines for fruit, fragrance and color. Perennial fruit-bearing vines for northern climates include grapes, hardy kiwifruit, Chinese magnolia vine, Goji-berry, passionfruit, thornless blackberries and thornless boysenberries. Annual vines include pole beans, scarlet runner beans, peas, cantalope, watermelons, squash, cucumbers and bitter melon.

P-6) CAPTURE, STORE, INFILTRATE AND UTILIZE WATER ON SITE.

Each piece of property, large or small, is a watershed. Permaculture looks at how water can be kept on site and infiltrated into the soil to grow food, water landscape plants and recharge aquifers. This reduces urban and rural runoff problems; and, when done on a broad scale, reduces catastrophic floods. The Chehalis river flood of December, 2007 is a current case in point for Washington state where this would have helped.

Resource:

Rainwater harvesting

http://en.wikipedia.org/wiki/Rainwater_harvesting

Good introduction and links to further resources.

Resource:

Water Storage: Tanks, Cisterns, Aquifers, and Ponds For Domestic Supply, Fire and Emergency Use.

www.oasisdesign.net/water/storage/pr.htm

The best book on small-scale, water storage available and it is written from a permaculture perspective. A do-it-yourself guide to designing, building, and maintaining water tanks, cisterns and ponds, and managing groundwater storage. It will help you with your independent water system, fire protection, and disaster preparedness, at low cost and using principles of ecological design. Includes how to make ferrocement water tanks. Oasis Design is also the source of the world's best information on greywater systems.

P-7) PARKING LOT OVERSTORIES

When you look at satellite photos of cities the predominant color is gray. A lot of that gray is parking area. Shopping parking, street parking, industrial parking, and individual parking lots. Not every parking area is appropriate for trees, but careful selection of species and good management plans could green up a lot of our parking space. This becomes part of the urban forest, It's main aim is amenity but permaculture chooses multi-purpose trees to provide useful material including timber, food, crafts, basketry material, medicine, etc. Widespread parking lot reforestation would provide meaningful jobs which have long-term payback and make neighborhoods more pleasant places to live.

Resource:

Parking lot trees info source.

www.urbanforestrysouth.org/resources/collections/parking-lot-design-issues-trees/

Links to lots of information and websites about Parking Lot Tree Installation.

P-8) NITROGEN-FIXING PLANTS

Nitrogen is the most commonly applied fertilizer and usually one of the most limiting factors to plant growth. There are dozens of nitrogen-fixing plants for many kinds of situations. These are planted in the system to help provide nitrogen to the crop plants. Examples include clovers, alfalfa, beans, peas, fava beans, buffaloberry, alders, and cascara.

Resource:

Nitrogen fixing plants at Wikipedia

http://en.wikipedia.org/wiki/Nitrogen_fixation

A short introduction to the topic. The site includes a large list of nitrogen-fixing plants with a great deal of info on each.

P-9) SHEET MULCHING

Sheet mulching is a technique used to turn lawns into gardens. It can also be used to establish gardens in rough, weedy areas. There are many variations but the general idea is to layer rich fertilizer materials on top of the lawn, followed by multiple layers of cardboard or thick layers of newspaper and a top layer of wood chips, ground bark or suchlike. Desired plants are transplanted into the system through all the layers.

Resource:

Sheet Mulching:

Greater Plant and Soil Health for Less Work.

www.agroforestry.net/pubs/Sheet_Mulching.html

An article written for the tropics, but most of the information is applicable to cold climates as well.

Resource:

Sheet Mulching for Home Gardens

www.eco-action.org/dt/mulch.html

A good article on the topic.

P-10) GROW BIOINTENSIVE GARDENING

This gardening method offers one of the highest-yielding gardening systems available in the world. They research how to grow a family's food supply on the smallest footprint of land possible including growing soil-building, green-manure crops. John Jeavons is the principal developer of this technique. Jeavons claims that biointensive, vegan agriculture at its extreme is capable of supplying total food supply on 300 sq metres per person. This system was not developed by permaculture but works in handily where intensive garden production is desired.

Resource:

“How To Grow More Vegetables Than You Ever Thought Possible on Less Land Than You Can Imagine”. John Jeavons. This book has sold more than 500,000 copies since its first edition in 1974. The 7th edition was published in 2007 by Ten Speed Press, Berkeley. 268 pages. Highly recommended!

Resource:

Ecology Action. Grow Biointensive gardening.

www.growbiointensive.org

Our mission is to train people worldwide to better feed themselves while conserving resources. Since 1972 we and our colleagues have been researching and developing GROW BIOINTENSIVE®, a high-yielding, sustainable agricultural system that emphasizes local food production and is based on historically intensive gardening systems.

P-11) GARBAGE-PIT GARDENS

Bill Mollison, the founder of permaculture, invented this technique while working in garbage-strewn, aboriginal settlements in Australia. This created a way to clean up the area plus produce food. Both of which helped people's morale. Three-foot diameter holes (three to four feet deep) are dug in suitable locations. Set aside the topsoil and spread the subsoil in a ring around the hole, then put the topsoil on top of the subsoil. All organic garbage and debris in the area is picked up and packed in the holes. Try to layer in fresh and dry stems and leaves if available. Weeds are great. What you are doing in effect is making a pit compost. Water as you go if the material is dry or it is the dry part of the year. Put the yuckiest stuff in the bottom and save some of the nicest stuff for the top. Throw some of the topsoil on before you put on the final cosmetic layer of mulch. Put in a pound of live red wiggler worms. There are also various compost activator cultures which can be added. The mound around the garbage pit is planted to useful plants including food plants. The pit is watered during the growing season. The plants surrounding the pit take up the nutrients and water that spreads from the pit. Done well, this is an efficient way to water plants in dry climates. Avoid toxic garbage in the pit, but non-food plants can be used if in doubt. Over time the material will settle as it digests and more organic matter can be added. Pit-gardens are a long-term gardening feature and become increasingly fertile. Rock walls and/or small trellises can be built on the north (or windward) side to provide an even more favored micro-climate.

P-12) BIO-REMEDIATION

Bioremediation can be defined as any process that uses microorganisms, fungi, green plants or their enzymes to return the environment altered by contaminants to its original condition. Using plants and micro-organisms to clean up pollution and toxins in soil and water. Basically the more you stimulate life in the soil the faster they break down pollutants. This includes human waste biological treatment systems.

P-13) MYCO-REMEDIATION.

Using fungi to clean up pollution and toxins in soil and water. The fungal mycelium grows through the soil and/or medium and eventually produce mushrooms.

Resource:

"Mycelium Running: How Mushrooms Can help Save the World". 2005. Ten Speed Press.

www.fungiperfecti.com By Paul Stamets of Fungi Perfecti in Olympia. The best book on the topic. Stamets incorporates a permaculture perspective.

P-14) INTEGRATE SMALL LIVESTOCK

Chickens, ducks, rabbits and goats provide food while consuming kitchen and garden waste. In permaculture animals are utilized for their functions as well as their products.

P-15) SEED & PLANT PROGRAGATION NETWORKS.

This is currently one of weakest links to creating local food systems. One of the world's worst scandals is that over the last several decades a few large agribusiness companies have gained control over most of the world's seed business. In the process there has been a huge (and continuing) loss of seed germplasm available. Many of the commercial varieties are bred for quantity, shippability and cosmetic appearance rather than hardiness or nutrition. GMO seeds and "terminator" technology are scary new developments. The need for locally-adapted, locally-grown vegetable seed crops is obviously very important. There is a heritage variety preservation movement represented by organizations such as the Seed Savers Exchange and several dozen small, independent seed companies.

Ideally there would be hundreds of people saving seed in every city and region. Keeping old, useful varieties alive, developing new varieties, and producing seed to meet local needs. Locally-adapted varieties available everywhere would mean the development of hundreds and thousands of new seed companies and seed networks. Seed saving should be covered in more detail in master gardener programs and at the local garden club level.

Resource:

Organic Seed Alliance

P.O. Box 772, Port Townsend, WA 98368

360-385-7192. info@seedalliance.org

www.seedalliance.org

A Northwest-based non-profit which serves the organic seed industry and individuals. OSA offers workshops on how to do seed production. Their 5th biannual conference will be held February 14-15, 2008 in Corvallis, Oregon.

Resource:

Seed Savers Exchange

www.seedsavers.org/

Founded in 1975, this non-profit organization was a pioneer in the heirloom seed movement. Huge catalog of seeds available from gardeners around the country and internationally.

P-16) NATIVE HABITAT RESTORATION

Native plant restoration, ecosystem restoration, erosion control, daylighting streams, creating wildlife habitat, cleaning up pollution, and so forth are worthwhile and necessary. A healthier environment means better quality of life, more productive environments, and better checks and balances in our cultivated ecologies. It is well documented that agricultural yields are higher and pest problems fewer where farm fields border natural areas. A lot of restoration work is volunteer but it can also offer meaningful work for people who are not integrated into the current job economy. The native plant restoration movement has grown larger and more experienced over the past several decades.

P-17) NATIVE PLANT RESTORATION & WILD-CRAFTING

I am proposing a sort of marriage between native plant restoration, wildcrafting and Northwest tribal ethnoecology practices. We can increase native edible plants in the natural landscape as a human food source. This means more people can wildcraft their own food. There is a growing interest in wild foods by many people including the primitive skills movement. Many cities and regions have edible wild plant teachers. A growing interest in, and knowledge of, wild foods combined with rising food shortages could lead to overharvesting of some wild foods. We need to increase wild foods, not decrease them. Native plant restoration which deliberately includes a generous portion of edible food plants can allow more people to supplement their diet with wild foods. Wild foods are gourmet eating and are generally more nutrition-dense than cultivated plants. Planting and managing stands of wild edible plants is what native tribes practiced all over the Northwest prior to white settlement.

Wildcrafting has never died out even in the most modernized cultures. A lot of people still harvest wild foods in the US especially in rural areas. Traditions continue in most North American tribes and they are experiencing a cultural resurgence for the last several decades. The amount of land available for wildcrafting has been dwindling due to loss of habitat to development and a continuing "loss of the commons". An expanded native plant restoration movement combined with edible native plants can add to local food security and at the same time achieve ecosystem restoration objectives.

Resource:

"Keeping It Wild: Traditions of Plant Use and Cultivation on the Northwest Coast of North America" by Nancy Turner and Douglas Deur. 2005. University of Washington Press. The best book on how Northwest native tribes gardened the landscape.

Resource:

Sustenance & Ecology on the Edge.

www.friendsofthetrees.net

An article by Michael Pilarski on a permaculture view of wildcrafting in an oceanside native plant community on the Olympic Peninsula.

P-18) FOREST GARDENS

Complex and productive forest gardens have been developed by many indigenous cultures in Asia, Africa, Central America and the Pacific. Permaculture has been a leader in developing contemporary forest gardens in all kinds of climates. In fact, forest gardens are one of the hallmarks of permaculture. The idea is to grow a lot of fruit, food and other useful products in a multi-layered system of trees, shrubs, vines, herbs, and ground covers. Livestock are often integrated. These are long-term, productive ecosystems.

Resource:

Edible Forest Gardens. 2 volumes. Ecological Design and Practice for Temperate Climate Permaculture.

David Jacke. 2005. Chelsea Green Press. White River Junction, VT. 378 and 654 pages.

The most in-depth book on the topic.

Resource:

Agroforestry Research Trust,

www.agroforestry.co.uk

Their website has limited information but they publish "Agroforestry News", a quarterly newsletter, focusing on temperate tree and shrub crops. Published in England, the best journal on the topic. Available from the Permaculture Activist in the USA.

Recipe for personal food production in the city.

As a permaculturist what would I do if I lived in the city and wanted to produce my own food? Every situation is unique but here are some things I am likely to do in order of preference.

1) Learn how to recognize, harvest and process wild foods. Where are the abandoned fruit trees? What weeds are edible?

2) Garden in my own yard (if I have one).

3) Garden in a nearby community garden. Start one if there isn't one.

4) Set up a greenhouse to extend the growing season.

5) Integrate small livestock into my garden system if possible such as chickens, ducks, rabbits and goats.

6) Grow useful plants up the walls and rooves of my house and any outbuildings inasmuch as possible.

7) Guerilla gardening. Planting useful plants on other people's property or public spaces for future harvest. This can be with permission or surreptitiously.

8) Rent farmette land in the peri-urban fringe and commute to my mini-farm.

9) Cooperate with my neighbors. Participate in social programs and movements as outlined in Part II of this article.

I always have six to twelve months of food on hand because of my gardening, bulk buying, food processing and barter fairs. This is just my normal lifestyle. I don't think of it as an emergency food supply, but it could be. I have the gardening tools and know-how to grow productive gardens with hand labor. This is personal food security. I'd like to know I was surrounded by people who also had gardens and full food pantries. This would be much safer than having a full pantry surrounded by a sea of hungry people.

Conclusion:

Creating socially-just and ecologically-sustainable local food systems is an idea whose time has come. Permaculture is one of many movements towards this end and has its particular contributions to the whole. I hope this short article has given you some insights. This article is a work in progress and future installments may be issued.

*Millions of us, working together
are co-creating the future.*

Michael Pilarski, December 27, 2007
Friends of the Trees Society

Permaculture resources next page.

Permaculture Resources:

The two key books on temperate-climate, permaculture gardening (both written by authors in Oregon) are:

Gaia's Garden.

Toby Hemenway. 2001. Chelsea Green Press, White River Junction, VT.

Food Not Lawns: How to Turn Your Yard into a Garden and Your Neighborhood into a Community. Heather Flores. 2006. Chelsea Green Press. White River Junction, VT.

Major permaculture websites:

The Permaculture Activist

www.permacultureactivist.net

This is the best information source on North American permaculture. The site includes a nation-wide list of permaculture design courses and related trainings and a Global Directory of permaculture groups.

Permaculture article on Wikipedia

<http://en.wikipedia.org/wiki/Permaculture>

Great introduction to permaculture at Wikipedia.

www.ibiblio.org/permaculture-online/pclinks.html

Great linking website for permaculture.

www.attra.org/attra-pub/perma.html

Great linking website and introduction to permaculture.

www.permacultureinternational.org/

Northwest Permaculture Resources:

Eugene Permaculture Guild

julie@efn.org

www.eugenepermacultureguild.org/main/

Portland Permaculture Insitute

PMB #101, 3527 NE 15th Ave., Portland, OR 97212

503-293-8004. pam@portlandpermaculture.com

www.portlandpermaculture.com/

Vancouver Permaculture Network

#102 - 5698 Aberdeen St.,

Vancouver, B.C., Canada, V5R 4M6

Harold Waldock, cell :604-763-6984.

haroldw@alternatives.com

www.alternatives.com/vpn/

Seattle Permaculture Guild

<http://permaculture.info/index.php/>

Seattle_Permaculture_Guild

www.permacultureportal.com

The website for the Bullock's Brother Homestead on Orcas Island. One of the best permaculture sites in the country and an educational center.

Food Not Lawns

PO Box 42174, Eugene, OR 97404

(541) 343-4673. foodnotlawns@yahoo.com

www.foodnotlawns.com

Promoting peace and sustainability through permaculture, organic living and community interaction.

Urban Permaculture Guild

6421 Hillegass Ave, Oakland, CA 94618

Katherine Steele. info@urbanpermacultureguild.org

<http://urbanpermacultureguild.org/>

Northwest Permaculture Design Course

February 16-March 2, 2008.

**Sahale Retreat Center,
Near Olympia, Washington**

The course will be taught by Michael Pilarski, Laura Sweany and guest presenters. An intensive, two-week residential training. Some scholarships and work-trade fee reductions are available. Further details are on my website: www.friendsofthetrees.net.

I propose a permaculture design course for community hunger and gardening organizations in the Northwest.

As a first step we would like to invite people from community hunger organizations to take part in our 2008 permaculture course at the Sahale Retreat Center near Olympia, Washington. By the winter of 2008/2009 perhaps we will have made enough connections with hunger groups to put on a specific course tailored to them.
