

# Sustaining the Pacific Northwest

Food, Farm, & Natural Resource Systems

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World Class. Face to Face.

## Organic Farming Continues to Expand in Washington

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When I worked on an organic farm in Okanogan County during the 1970s, organic farming repre-

sented a very small sliver of American agriculture. It was not clearly defined beyond the preference for natural techniques and materials and the avoidance of synthetic pesticides and fertilizers. Soil and its organic matter were, and continue to be, central concerns. Information on organic production was limited and often anecdotal. All of this relegated organic farmers to the fringe of Washington agriculture.

### Mainstreaming Organics

Much has changed in the ensuing decades. Organic farming and processing methods have been codified by laws and various certification organizations. The Washington State 1985 Organic Food Products Act established the Organic Food Program within the Washington State Department of Agriculture (WSDA). This program certifies organic products within Washington State. National demand for organic foods grew steadily during the 1980s and accelerated to 20-30% annual increases during the 1990s. This market growth accompanied an increase in organic farm acreage nationally.

Washington State experienced more than a six-fold increase in organic acreage production in less than a decade (Figure 1). Organic farming proved to be a biologically viable approach to farming and in many cases a more profitable one for growers.

With expanded production, organic agriculture moved into the mainstream. Many farms and food businesses ventured into organic to experiment and di-

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**Sustaining the Pacific Northwest**  
Food, Farm, & Natural Resource Systems

This quarterly newsletter provides a discussion forum for people working towards community-based sustainable food, farm and natural resource systems using interdisciplinary oriented research and practitioner knowledge.

This is a joint newsletter of the WSU [Center for Sustaining Agriculture & Natural Resources](#), the [WSU Food & Farm Connections Team](#), the [WSU Small Farms Program](#) and the [Water Quality Management Team](#).



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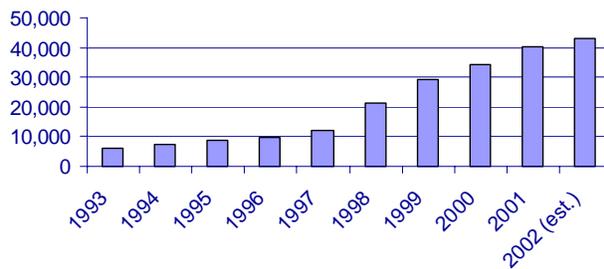
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**Figure 1**  
**Organic Acreage - Washington**



versify their markets. Organic farms are no longer primarily small acreage, labor-intensive operations run by people with a particular philosophical view of agriculture. Large-scale, highly mechanized organic farms developed in Washington and have increased the demand for products, support, and services (e.g., research, extension, promotion, marketing).

**Washington's Organic Sector**

Growers and others in the organic sector have indicated the need for publicly available statistics about organic farming. Since Washington State Agricultural Statistics Service currently does not break out organic farming as a separate category, I recently compiled some statistics that illustrate the status of organic farming today. Figure 2 portrays the reported acreage of organic farms by county as of July 2001, while Figure 3 shows the num-

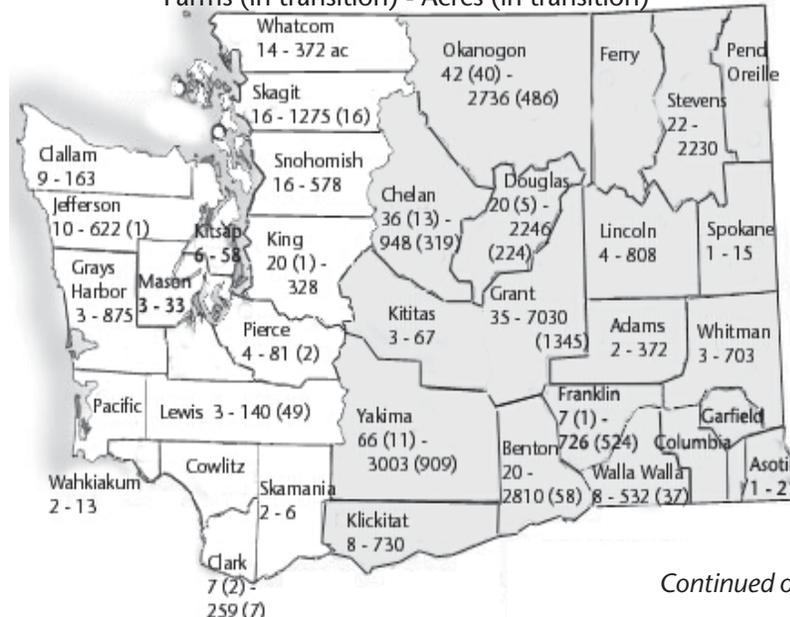
ber of farms with certified land or in transition status. These numbers only reflect those farms certified by the WSDA Organic Food Program. While this program conducts nearly all the certification within the state, it does not include exempt growers (sales <\$5000/year) or growers that do not rely on certification for their local, direct marketing.

Most organic production (acreage) in the state occurs in the irrigated areas of central Washington. Grant County boasts the largest amount of certified acreage, while Yakima County has the largest number of certified organic growers. Organic farming thrives in western Washington as well, growing from a 1988 total of 33 certified organic farms to 142 today. While acreages are smaller in western Washington, an expanding number of farmers are doing quite well there, many utilizing direct marketing outlets. These farmers often realize a higher value sales per acre than their counterparts in eastern Washington.

**Which Crops Are Going Organic?**

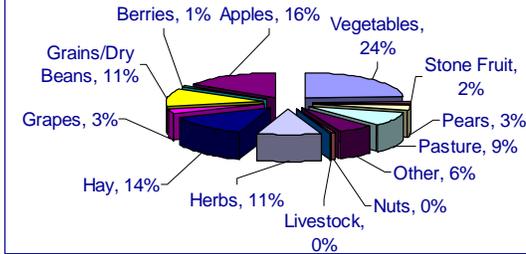
The proportion of certified organic acreage in the state by crop type is illustrated in Figure 3, with vegetables, tree fruit, herbs, and forages as the leading segments.

**Figure 2 - Organic Farms & Acres (2001)**  
Farms (in transition) - Acres (in transition)



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**Figure 3**  
**Organic Acreage by Crop Type**



These statistics illustrate two very different organic farming sectors. Large scale farming in eastern Washington accounts for most of the organic acreage (82% of certified acres, 98% of transition acres) and a majority (66%) of organic growers. Average organic acreage per farm is about 92 acres in eastern Washington compared to 40 acres in western Washington. However, including exempt growers and organic growers who chose not to be certified would certainly increase numbers for western Washington. It will be important to understand the differing research and education needs of these two groups of organic growers.

For some crops, organic production remains low, such as organic grain production in the dryland regions of eastern Washington where participation is minimal. In other crops, organic acreage comprises a significant portion of total production. For example, in 2001, 6500 acres of certified organic apples in Washington represent about 4% of the state's total apple acreage. Organic pears on 1300 acres represented about 5% of total pear acreage. Washington's organic apple acreage represents about 38% of the organic apple acreage in the United States and 21% of worldwide acreage. However, the expansion of organic apple production here and abroad increases competition and changes market dynamics. Some varieties have experienced price declines as growth in supply exceeded the growth in demand.

#### Grower Perspectives

Based on recent studies from Washington State University, organic apple orchards can produce the same yield and quality as a conventional orchards, but at a 10-15% higher cost. Premium prices for organic apples generally lead

to higher net returns. With ongoing research, cost savings are anticipated in the near future, especially for fruit thinning. As conventional apple production shifts to more IPM and biological control, the difference between organic and conventional may decrease.

Growers have several motivations to try organic farming.

With low prices for most farm commodities, certified organic products may offer increased returns. Organic farming can be viewed as a risk management strategy, diversifying markets, reducing the impact of the loss of pesticides due to regulatory changes, and reducing liability for worker exposure or contamination. In addition, recent changes in Federal farm policy may provide funds to growers using environmental conservation practices, such as organic farming. While most research results are inconclusive about the influence of organic farming on the quality of food products, growers and consumers are increasingly reporting positive experiences with organic foods.

As more growers try organic production, many of them find that certain practices adopted to meet the organic rules apply across the whole farm. I frequently hear about this "trickle-down" effect from growers and field consultants. Examples include the use of compost and increased reliance on natural biological control. Thus, as agricultural research addresses more organic issues, all growers stand to benefit.

#### CSANR's Role

Public agricultural institutions are responding to the increase in organic farming. WSU CSANR surveyed WSU faculty about their involvement in research and education projects that were directly useful to organic growers. Over 50 faculty responded that their programs directly benefit organic growers, especially in pest management and soil management. The results of this study can be viewed at <http://csanr.wsu.edu/resources/OrganicReport.pdf>.

The original mandate of CSANR was to support research and education on alternative practices, many of which form the foundation of organic farming. CSANR submitted funding requests to enhance WSU's capacity to support the needs of growers interested in organic and other biointensive approaches. Funding would set up organic experimental land for major crops at WSU research locations, support the development of organic seed production in the region, explore organic weed control methods for annual crops, and examine the effect of production practices on food quality.

Funding would also support research, extension, and development of new undergraduate programs in organic and biointensive farming.

#### Looking Ahead

Researchers estimate that organic foods might eventually expand to 10-15% of total food sales. Price premiums will influence the expansion, as will the continued shift of conventional farming to more sustainable approaches. It is not inconceivable that for certain crops organic production could become the norm if production costs are equal to or less than other systems. Increased investment in research on organic farming would make this more likely. Central Washington is ideally positioned for organic farming of many commodities with its combination of a semi-arid climate and irrigation water. Thus, organic farming, or whatever it evolves into, will likely influence agriculture in our state for years to come and may offer Washington agriculture a measure of increased sustainability, both environmentally and economically.

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## Bat houses for IPM - Benefits for Bats and Organic Farmers

Mark and Selena Kiser  
[Bat Conservation International](#)

Reprinted from [Organic Farming Research Foundation](#), Winter 2003, Number 12.

Bats are helpful to farmers because they consume large quantities of insect pests, but many bat species are declining due to loss of roost sites. Farmers can help bats by providing new roosts in the form of bat houses while at the same time benefiting from bats' pest reduction services. Ten organic farms in central California were selected in 2000 as installation sites for bat houses, to initiate the first phase of an integrated pest management project: to test bat housing preferences and determine optimal design and mounting strategies for this region.

### Objectives

The first objective of this study (Phase I) was to establish bat houses at 10 organic farms in California. Larger, experimental bat house designs were installed at five of these sites for testing purposes. The second objective (Phase II) will be to determine the degree of impact that bat house-roosting bats have in reducing crop pests.

### Materials and Methods

Four wooden bat houses were installed at each site, and five of the sites also received a plastic insulated bat house. The wooden houses had four chambers and were built by Swetman Enterprises of Madison, Virginia (540-948-4146). External dimensions were 32" H x 18" W x 5" D. Wooden houses were patterned after the nursery house from *The Bat House Builder's Handbook* published by BCI. The experimental plastic insulated models were eight-chamber "Condo" houses with a commercial-grade stucco coating inside and out, built by [Maberry Centre Bat Homes](#) of Daingerfield, Texas. External dimensions were 23" H x 19" W x 11 1/2" D.

We tested pole-mounted houses versus building-mounted houses, as well as plastic versus wooden houses, and light-colored versus medium-colored houses. Bats use houses that best meet their temperature needs, and will move

between different ones as ambient temperatures change (for example, on hot days, bats may choose light-colored houses, and on cool days, medium-colored houses).

Two wooden houses at each farm were painted a light color (off-white) and two were painted a medium color (medium brown) prior to installation. Plastic insulated bat houses were pre-painted either medium green or light gray. Two wooden houses per pole were installed side by side (one lighter, one darker) and the other two wooden houses side by side (one lighter, one darker) on a building. (Data from the North American Bat House Research Project shows that pairs or groups of houses are more successful than single houses.) Plastic insulated houses were attached adjacent to wooden houses on the same building at five sites. Overall, 25 houses were mounted on buildings and 20 houses were mounted on poles.

Identification numbers were affixed to all houses to enable tracking over time.



The owner of Anderson Almonds takes notes on his newly installed bat houses near Hilmar, CA.

Three bat houses were installed on a barn at Sierra Orchards, an organic walnut orchard near Winters, CA. The house on the left is a plastic insulated model, while the other two are wooden nursery models. All three of



the houses were occupied within three months of installation. They

face east and receive approximately six hours of direct daily sun during summer.

Mounting sites were selected to avoid afternoon sun exposure to prevent overheating. For this reason, most

houses faced either north or east and were located north or east of large deciduous trees to block afternoon sun from the west in summer. Finished installation heights for houses mounted on buildings ranged from 13 to 20 feet. For pole-mounted houses, 21-foot-long, 2-inch inside diameter steel poles were used.

Following installation, bat houses were monitored for occupancy. Numbers of bats and species (if known) for each occupied house were forwarded to BCI. Other bat house data (habitat, farm type, distance to nearest water, etc.) were recorded at the time of installation and entered for inclusion with BCI's 2001 North American bat house survey.

### Project Results

Bat houses at five of the 10 farms (50%) were used by bats within one to five months of installation. A total of 11 of 45 houses were occupied (24%), though several others may also have been used. Bat houses mounted on barns (9 of 25, 36%) were used more often than those on poles (2 of 20, 10%), though observations were limited to less than one full season. Two of the five plastic houses (40%) had confirmed use, indicating the design is acceptable to bats.

Based upon observations, at least two species were present. Most were Mexican free-tailed bats (*T. brasiliensis*), while some were thought to be big brown bats (*E. fuscus*). Yuma myotis (*Myotis yumanensis*) and/or little brown bats (*M. lucifugus*) and pallid bats (*Antrozous pallidus*) were observed in other previously-installed bat houses in the area in June 2001, and could potentially use bat houses installed for this study. Multiple species often inhabit the same bat house, and as each species has different dietary preferences, attracting more than one species to a farm can increase the number of pest



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types consumed. For example, Mexican free-tailed bats feed primarily on moths, while big brown bats mainly eat beetles.

#### Discussion

We are encouraged that many of the bat houses were inhabited this early in the project, especially considering that they were installed in June and August. (The logistics of transporting 45 bat houses, poles, tools, hardware and paint to 10 farms over a seven county area was quite challenging.)

Rachael Long, farm advisor with the University of California (Yolo County)

Cooperative Extension, installs two wooden bat houses on a pole barn at Ferrari Farms, near Linden, CA.

Together with the owners of Living Farm Systems, Selena Kiser (left), project assistant for BCI's North American Bat House Research Project, installs wooden bat houses side by side on a pole on an organic farm near Livingston.



Ideally, bat houses would be installed by late winter. Occupancy may have been higher in 2001 if houses had been installed before maternity colonies are formed. We are also pleased that two of the plastic houses were used. Monitoring will continue through 2003 to determine bat preferences for model, color and placement. It often takes several years

for bats to be attracted and for colonies to become established.

Although results are preliminary, bat houses mounted on buildings performed better than those on poles. In the hot, dry summer climate of California's Central Valley, where daily temperature fluctuations are great, buildings act as heat sinks and help to buffer daily temperature changes. Therefore, temperatures inside bat houses mounted on buildings fluctuate less than those mounted on poles, which may explain why bat houses on barns had a higher occupancy rate. Elsewhere, pole-mounted houses do almost as well as those on buildings.

In Phase II of this study, sites where bats are attracted will be slated for crop pest comparison research by graduate students or other researchers. The study will identify the varieties and numbers of pests being eaten by bats, followed by comparison of pest numbers and/or damage at varying distances from bat houses. The amount of bat foraging activity over agricultural fields and bat-insect interactions will also be documented. Presence of foraging bats and changes in bat density will be documented using ultrasonic bat detectors and night vision verification, and pest abundance and damage will be compared to bat densities and distances from bat houses. Additional evidence will come from comparison of pest hatch times with the bats' activity patterns.

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#### Benefits of Bats

More than half of the 45 species of bats living in the United States and Canada are either endangered or candidates for such status, and many of those still considered abundant are also in alarming decline. As was formerly the case with purple martins and bluebirds, roost loss is an important factor in decline. Millions of bats have been forced from caves and old growth forests by human activities. Many that have relocated to abandoned mines have been buried during mine safety closures. Others have occupied buildings from which they are increasingly being excluded. Bats are not well equipped to handle these threats because they are the world's slowest reproducing mammals for their size, and they form the largest and most vulnerable aggregations of any vertebrate.

Loss of bat habitat poses a particular problem to agriculture because bats are primary predators of vast numbers of pests that cost American farmers and foresters billions of dollars annually. For example, Brazilian (Mexican) free-tailed bats (*Tadarida brasiliensis* mexican) from central Texas alone consume approximately two million pounds of insects nightly, a large proportion of which are corn earworm moths (a.k.a. cotton bollworm), the most damaging agricultural pest in America. In Indiana, a colony of just 150 big brown bats (*Eptesicus fuscus*) consumes sufficient cucumber beetles each summer to prevent egg laying that would produce 33 million of their rootworm larva, another costly pest. Without adequate habitat, however, bats are unable to fulfill their vital roles in keeping insect populations in check

Recent studies show that the most common bat house occupants, big brown, little brown, and free-tailed bats, can be extremely beneficial to agriculture. An organic farmer in Oregon who attracted 600 little brown bats to bat houses reported elimination of a previously serious corn earworm problem. Not only do they consume pests including corn ear worm, armyworm, and tobacco budworm moths, but their mere presence can have an effect on insects. It has been documented that moths listen for bat echolocation sounds and avoid areas within 150 feet of where they hear even one bat.

The Bat House Project has already developed many successful bat house designs, but these models may not necessarily meet the needs of farmers. Most house only small numbers of bats and large designs are often too costly for most farmers to build or purchase for large colonies. In this study, BCI tested a newly-developed larger design, both inexpensive and lightweight, alongside conventional designs. These new houses are based on the latest research and are built by Maberry Centre Bat Homes. They can accommodate 500 to 800 bats (depending on species) in a space of approximately four cubic feet.

— Mark & Selena Kiser

The North American Bat House Research Project is a program of Bat Conservation International. BCI is a non-profit organization dedicated to conserving and restoring bat populations and habitats around the world. OFRF project report: No. 99-44, awarded Fall 2000. 13 pp., including bat house mounting diagrams.

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## Institutional Sales for Small Farms: A New Marketing Opportunity

Kelli Sanger, Coordinator  
WSDA Small Farm and Direct Marketing Program

Family farms across the nation are beginning to sell their products directly to institutions, including K-12 schools, colleges and hospitals. Selling to institutions presents an opportunity for small and medium size farms to sell larger quantities to a few customers, while receiving higher prices than on the open market. Institutions are increasingly interested in procuring local, sustainably produced, and organic foods due to customer demands for high quality and freshness.



Institutional sales can provide a stable market even when inclement weather affects your product sales through other

channels, such as Farmers Market stands. Institutions purchase their products in large quantities at wholesale prices, typically 30 to 40 percent below retail prices. These institutions may require liability insurance from all their food suppliers, including farms. They usually receive deliveries at least once or twice a week and often pay for products once a month, not upon receipt of goods.

## Market Specifics for Institutions

**K-12 Schools.** A WSDA survey of Washington K-12 schools shows that 77% of schools are interested in purchasing more local foods, especially fruits and highly perishable foods that are easy to serve (e.g., apples, pears, melons, and tomatoes), or foods they cannot access through traditional channels, but which are popular with students (e.g., strawberries, raspberries, etc.). Schools often plan their menus a month in advance. They are under pressure to provide meals at low cost and they set their school lunch prices once a year.

**Colleges and Universities.** Colleges and University food services can be self-operated by the college or run by a corporate food services management company. Food services serve meals to students, staff, and faculty during the school year, and also provide catering services year round for conferences and events held on campus. College populations are more aware of organic foods and the issues around them, so food service companies that cater to this population may be the most responsive sector for organic and sustainable producers to approach. These institutions usually have flexible pricing systems for their foods, and so can often pay a higher wholesale price for quality foods.

**Hospitals.** Hospital food services serve patients, staff, and visitors at their cafeterias. Similar to university food services, they can be corporately managed or self-operated, and they serve meals from their kitchen year round.

## What's going on in Washington?

Washington institutions are starting to purchase foods from local producers. In the Seattle area, the University of Washington will conduct a pilot in their cafeterias, serving local food from area farms in 2003. Additionally, Bastyr University currently purchases organic foods from area farms, and also serves foods from their organic farm. In Olympia, The Evergreen State College food service, Bon Appétit Management Company, offers organic food in their main dining hall and showcases local farm produce by hosting local farm dinners

monthly. These dinners afford farmers and food service personnel the chance to work together and form working relationships. The Olympia School District serves salad bars made with 50% organic foods in two elementary schools and plans to increase the amount of local food served.



In Eastern Washington, Spokane Tilth received a grant from the Kellogg Foundation to study and identify the barriers to and opportunities for serving locally produced foods in Spokane County colleges and universities. Outcomes from this project will be released in April 2003.

## Strategies for Selling to Institutions

*Collectively market locally produced foods to institutions through an association or cooperative.* Food service directors have limited time available to order from food vendors. Approaching buyers as a group reduces time and coordination required for food buyers and chefs while supplying a diversity of fresh foods to institutions. It also reduces time and effort by individual producers.

*Schedule an appointment with the food service director or general manager of the institution to discuss purchasing your farm products.* Food service directors, supervisors, or general managers usually order food for their institutions. Food service directors often do not know where to look for local farm products. Bring information about your farm and your products (i.e., product and price lists, samples if available). A brochure or flyer that describes your farm and emphasizes the benefits of buying from you can be helpful, while also providing your contact information for future reference.

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Be open with food service directors about the safety of your food products. Food service directors at K-12 schools are very concerned about microbial contamination of foods. They may be concerned about manure applications to your fields because of possible e-coli contamination. A good way to assure food service directors of your products' safety is to follow the FDA's Good Agricultural Practices Guidelines and have a documented plan of your farming practices.

Network with local non-profit organizations to promote locally produced foods and coordinate farm-to-school, farm-to-college and farm-to-hospital programs in your area. Local non-profit organizations can work with institutions to showcase locally produced foods and help you network with interested food service directors in your area.

(Photos by Leslie Zenz)

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## Forest Understory News

### Nontimber Forest Products & Biodiversity Conservation in the US - A Project Overview

[Rebecca McLain](#) & [Kathryn Lynch](#)  
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Thousands of people across the U.S. spend time in the forests harvesting medicinal plants, floral greens, wild foods, and other nontimber forest products (NTFPs). Forest managers, practitioners and policy makers bemoan the lack of information on har-



vesting these species sustainably. For example, data about the density and distribution of NTFPs and the ecological impacts of different harvesting levels are scarce. Likewise, the economic, political and cultural factors that influence resource use patterns are poorly understood. NTFP inventory and monitoring efforts are few and far between.

To support sustainable NTFP management while maintaining biodiversity, the [National Commission on Science for Sustainable Forestry \(NCSSF\)](#) awarded the [Institute for Culture and Ecology \(IFCAE\)](#) a \$200,000 grant in June 2002. The project objective is to examine the links between forest management practices, nontimber forest products, and biodiversity in the U.S.

The project consists of five components:

Interviews with NTFP harvesters in the Rocky Mountain West, the Southeast, the Northeast, the Upper Midwest, and the Pacific Coast to synthesize harvester knowledge about forest management and biodiversity.

Four regional workshops for land managers, policy makers, scientists, buyers, and harvesters to discuss participatory inventory and monitoring approaches.

Expansion of a state and federal NTFP Management Survey (<http://www.ifcae.org/projects/usfs-survey1/index.html>) to document public forest managers' views on how management activities affect local biodiversity.

Expansion of IFCAE's free, web-based [NTFP Species Database](#) used for identifying commercially harvested NTFPs in a region.

Expansion of IFCAE's web-based annotated [NTFP Bibliographic Database](#) that catalogs references on NTFP policy, management, culture and ecology.

IFCAE anthropologists, Kathryn Lynch and Eric T. Jones, began fieldwork for the 18-month grant in August 2002. Between September and November 2002, they traveled through the Rockies and the Southwest, interviewing harvesters and forest managers. With the cold weather coming on, they maintained a southerly route across the U.S., talking and visiting with harvesters and forest managers in the southeastern States during December, January, and February. With spring in the air, the team is now heading north to conduct interviews in the Appalachians, the Adirondacks, and the Great Lake states. The IFCAE field team will finish up the study with interviews in Washington, Oregon, and California during June, July and August.

Field data analysis will be finished in the fall. To find out more about the project as it unfolds, take a look at the [IFCAE website](#), where IFCAE posts interim reports and information from the regional workshops. The final project report will post to the IFCAE website in late December 2003.

### Highlights from the West and Southeast Field Work

Managing NTFPs is challenging in part because the category "non-timber forest product" covers so many different species and types of products. Even if we exclude such products as fish and game, NTFPs still include hundreds of botanical species and products. In the West, some of the major products are medicinal plants and herbs, native seeds, native plants for transplanting, post and poles, firewood, and wild fruits and mushrooms. In the Southeast, key products include a wide variety of medicinal plants, longleaf pine needles for landscaping, wild fruits and mushrooms, turpentine, and grasses, vines, and barks used for making baskets, wreaths, and other crafts.

The people who harvest NTFPs also fall into many, often overlapping, categories. Some of the key categories encountered over the past six months include:

**Subsistence harvesters**, who collect NTFPs primarily for personal or household use;

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**Commercial harvesters**, who collect primarily for trade or for cash;

**Healers**, who gather products specifically for healing;

**Recreational harvesters**, who collect for pleasure, recreation, exercise, or as a hobby;

**Spiritual harvesters**, who gather NTFPs for spiritual or sacred endeavors;

**Scientific harvesters**, who harvest NTFPs or reserve NTFP gathering areas for observation or study; and

**Educational harvesters**, who organize educational workshops and classes about NTFP characteristics and gathering practices.



Salal Scale

Harvesters we've encountered in both the West and the South vary greatly in terms of their economic circumstances, experience and knowledge about NTFPs and forest ecology, and their values and ethics. Equally important, we have found that NTFP harvesting is an activity and way of life for people from a wide variety of cultural traditions. In addition, it is a broad-based activity, with urban, suburban, and rural inhabitants alike making time in their lives to pick berries, gather mushrooms, and collect medicinal plants.

In addition to learning about the products and people who harvest NTFPs, we are also gathering information about how managers, harvesters, and other forest stakeholders are inventoring and monitoring the im-

pacts of forest management and harvesting activities on biodiversity, including NTFP species. We will provide details of some of these efforts in the next newsletter issue.

#### HOW YOU CAN BECOME INVOLVED

The national scope of this project, as well as the complexities of NTFP harvesting and management, demand a research approach that is as inclusive as possible. The more people who contribute to this research project, the greater the likelihood that the results will be useful for a broad range of stakeholders. Some of the ways that you can contribute include the following:

1) If you know of any participatory or collaborative NTFP inventory and monitoring efforts in the U.S., please contact [Rebecca McLain](mailto:Rebecca.McLain).

2) Participate in the West Coast NTFP workshop on involving harvesters in inventory and monitoring of NTFPs. The workshop will take place at the World Forestry Center in Portland, Oregon on September 4<sup>th</sup>, 2003. The workshop is free, but we ask that you pre-register by contacting [ktlynch@ifcae.org](mailto:ktlynch@ifcae.org) for the registration form.

3) If you know of others who would be interested in contributing to the workshop discussions, please encourage them to attend.

*IFCAE, a 501(c)3 non-profit based in Portland, Oregon, conducts applied policy research on NTFPs in the U.S. Previous work can be viewed at [www.ifcae.org](http://www.ifcae.org).*

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### Research & Extension Highlights

#### Direct Seeding

Andy Porter, Walla Walla, Washington *Union-Bulletin*  
(reprinted with permission)

DAYTON - As near-record rainfall drenched Columbia County last week, county extension agent Roland Schirman saw something he didn't expect. As Schirman traveled around the county and checked for runoff in draws and gullies, he either found

clear-running water or, in some cases, no water at all. In past years, those draws and gullies would have been gushing chocolate-brown water, signaling the erosion of soil from fields. Elsewhere in the county, the mud-laden water would have washed out roads and clogged ditches. But that didn't happen, and Schirman and others credit a quiet revolution in farming which is now keeping tons of Columbia County topsoil in place instead of running into the Tucannon and Touchet Rivers.

The change has been the replacement of traditional tillage-reliant farming with direct-seeding techniques. In years past, farmers tilled fields to control weeds and prepare the seedbed. But that method created soil conditions which prevented water from penetrating. The result was that when a heavy rainfall hit, the water would wash off, carrying the topsoil with it, like pouring a cup of water on a heap of flour. The water runs off, carrying the top layer of flour with it instead of soaking in. But direct-seed farming maintains what are known as "macropores" and existing root systems. This allows water to infiltrate the soil. The result is moisture soaks in instead of running off.

A key factor that has allowed producers to make the transition to direct seeding has been the ability to tailor herbicide usage to manage weed and volunteer crop growth. With proper timing the application of environmentally friendly products prior to seeding has allowed the crops to become establish and be highly competitive with later emerging weeds. After a number of years of sustained use of direct seeding growers report that some of the weed that were a major problem in an aggressive tillage system are of minor importance.

The switch, which has been a voluntary effort by county farmers stretching over the past ten years, has been a major player in stopping erosion, said Skip Mead, a farmer and member of the Columbia Conservation District. Investment by growers to transition to direct seeding has been significant in that previously used equipment is incapable of properly placing seed

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when planting the crop. The new seeding equipment, along with the power unit required to pull this equipment, can easily top the \$250,000 level. Producers have also taken on added income risk in that often the sequence of crops grown in field to make a direct seed system function properly (crop rotation) requires the planting of crops with a much lower income potential.

About 80 percent of Columbia County's 180,000 acres of cropland are now being farmed by direct-seeding in one form or another, Schirman said. With the efforts of local conservation district Columbia County is the first area of Washington to have this level of implementation of direct-seeding by growers. Although they knew the technique helps control runoff and erosion, last week's results astounded everyone, Mead said.

"It just blows us away," Mead said as he viewed pictures taken by Schirman after the Jan. 31 - Feb. 1 storm. Ditches, which in the past would have been clogged with mud, were dry and runoff from other areas practically non-existent. Tom Bensel, Columbia County road superintendent, said if a similar heavy rain had occurred about ten years ago, road damage from runoff and mudslides would have been nearly catastrophic. "It would have taken three to five days...just to get a dirty goat path to everyone's door," he said. Finishing the cleanup and repair would have taken "the majority of the spring and summer maintenance season." Bensel estimated the cost to the county would have been "just under half the total yearly budget for road maintenance, just to repair unanticipated damage."

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## Around the Region

### Food for Thought Café

As reported by the January edition of the Portland State University campus newspaper, *The Vanguard*, the *Food for Thought Café* recently opened in the basement of Smith Memorial Student Union and offers a menu devoted to

local, organic agricultural products. The article quotes co-manager Jesse Engum:

"We are interested in a number of priorities in setting up the menu," Engum said. "Firstly, we feel that the best food is that which comes from what is seasonally, locally and organically grown or raised. To this end, we've designed the menu around winter crops such as roots, squash, wintergreens and products that can be preserved with appropriate technology such as beans and corn. In the spring, we will change the menu completely, responding to organic produce that will become available then. Our menu will change four or so times per year in this fashion. We believe that local and seasonal food is a strong basis for a healthful diet and a socially responsible economy. We do make some concessions to accommodate our local interests. For example, coffee isn't grown locally on a commercial basis, but it's a very large part of our local diet and business. To offset the detriment of purchasing something like this, we strictly buy coffee that is shade grown, certified organic and traded at three times the economic standard for fair trade certification. It is roasted locally and in small batches by Stumptown Coffee Roasters, and delivered to us each week, the day that it's roasted. Aside from the politics of food production, we believe that food must be made from fresh, quality ingredients. All of the food we prepare is made 100 percent from scratch. We don't use any pre-made sauces, dressings or spice mixtures. We soak beans, lentils and peas, and mix our own seasonings from individual raw ingredients. We believe that people can taste the difference and will be much healthier for it. Of course, we are on a college campus, so the food must be inexpensive enough for a student to buy. Portland is an amazing city for food. With this in mind, we feel that people's palates here are more discriminating than to tolerate the fast-food options otherwise available on campus. To respond to the dietary needs and interests of people on and around campus, we'll en-

deavor to offer plenty of wheat-free, vegan, low gluten, lacto-ovo vegetarian and omnivorous food options. These will be expressed in pastries and deserts, salads, soups, sandwiches and main entrees."

To view the full article, visit [The Vanguard](#).

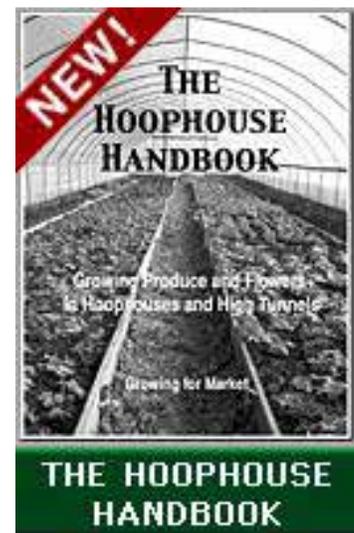
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## Reviews

### The Hoophouse Handbook: Growing Produce and Flowers in Hoophouses and High Tunnels

Lynn Byczynski, Editor

Unheated, unlighted and uncooled hoophouses have long been used throughout the world to extend the season and improve the quality of vegetable and flower crops. Hoophouses are made of metal or PVC hoops placed directly in the soil in the field and covered with a single layer of poly. Most hoophouses have lightweight ends that can be removed or rolled up and roll-up sides that provide passive ventilation. These low-tech hoophouses are often referred to as high tunnels or cold frames, particularly by the greenhouse industry, which manufactures them as overwintering shelters for container plants. Hoophouses enable farmers to: grow crops earlier and later in the season thereby earning income during otherwise unprofitable times of the year;



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grow delicate or heat-loving crops that would not thrive in a cool or windy environment; and increase the quality and yield of many crops.

Part I of the Hoophouse Handbook contains articles about vegetable and cut flower production that highlight the many ways that farmers are profiting from production in hoophouses in the United States. Part 2 discusses building a hoophouse, including where to buy kit structures, how to determine which structure is best for different uses, and tips for construction. Farmers will also learn the down side of hoophouse production and strategies for overcoming these obstacles. Included in the handbook is university and farmer based research that shows what crops do well in hoophouses. This research is still evolving in the United States, and the results will vary considerably depending on location and climate. To get the most out of a hoophouse, farmers are encouraged to try techniques from similar climate zones, keep records on production and profitability, and adapt techniques as appropriate. If farmers in Kansas are able to grow some crops all winter long in unheated hoophouses, the opportunities are simply waiting to be sown in the Pacific Northwest.

A copy of [The Hoophouse Handbook](#) can be purchased from CSANR for \$15 by contacting [Cindy Murray-Armstrong](#) at 253-445-4626. (*The Hoophouse Handbook: Growing Produce and Flowers in Hoophouses and High Tunnels*. 2003. Lynn Byczynski, Ed. *Growing for Market*, Lawrence KS, 1-800-307-8949, 58 pp.)

### **Growing For Market**

Published since 1992, this monthly newsletter for small farmers who direct-market produce and flowers has become one of America's most respected publications about high-value farming. This newsletter is written entirely by people who are farmers themselves, and provides serious, practical information about every aspect of direct market farming from people who have solid knowledge to share. They share ideas, discoveries, successes and failures. Find out the nitty-gritty details about suppliers, practices, and pricing.

If you are a fresh-market grower, thinking of becoming one, or an extension agent, researcher or teacher working with fresh-market growers, *Growing for Market* provides information on how to get the best existing markets, and find the most profitable crops. To subscribe, visit on-line at <http://www.growingformarket.com/>.

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### **Events**

#### **The Sustainability Forum**

May 29-31, 2003 ~ Portland, Oregon

This forum represents the collaboration of 45 non-profit organizations and government agencies, offers over 130 presentations, panels, and workshops over three days. This forum invites business leaders, community development professionals, natural resources sector practitioners, elected and agency officials, educators, and others with an interest in sustainability in the northwest. See [www.SustainableNorthwest.org](http://www.SustainableNorthwest.org) for details.

#### **National Organic Agriculture Standards - Satellite Broadcast**

The National Organic Agriculture Standards broadcast of March 21st can be viewed on-line <http://caheinfo.wsu.edu> from the link "Videostreams." The broadcast presents the basic requirements of the USDA's National Organic Standards and describes how the new regulations affect organic producers.

#### **Coordinated Resource Management (CRM)**

The Washington State Coordinated Resource Management Task Group offers training in small group facilitation and organization. A primary component of the training is a process called Coordinated Resource Management (CRM), a locally led, consensus-based process well known for resolving environmental issues. For further details see the [CRMAP](#) web site.

#### **Sustainable Natural Resource-Based Enterprises Symposium**

Mississippi State University (MSU) cordially invites you to attend this *First*

*National Symposium on Sustainable Natural Resource-Based Enterprises* to be held on the MSU Campus, May 28-31, 2003. The symposium will explore: the current state of knowledge about opportunities, needs, and implications of managing for natural resources; sustainability and profitability on private lands; and interactions and exchanges of information between natural resource professionals, managers, educators, agricultural leaders, private landowners, community leaders, economists, market analysts, agency administrators, and public stakeholder groups.

Attendance will be limited to the first 250 people who pre-register. For information about attendance and registration: [James E. "Jim" Miller](#), (662) 325-2619, Fax: 662-325-8750.

#### **Food Safety Farm to Table**

The Northwest Food Safety Consortium presents the 11th Annual Food Safety Farm to Table Conference, May 28-29, 2003. For details, visit <http://safefood.wsu.edu>

#### **Sustainable Land Application Conference**

This conference will be held January 4-8, 2004 at the Wyndham Palace Resort and Spa, located in Lake Buena Vista, Florida. The conference will address soil reactions of constituents in biosolids, effluents, and manures and other non-hazardous wastes. The objectives are to: 1) Review fundamental and specific reactions of constituents in non-hazardous wastes (manures, biosolids, and effluents), 2) Improve understanding about contaminant reactions in soils, emphasizing the commonalities of reactions among wastes, 3) Synthesize multi-disciplinary information and characterize the "state-of-the science", 4) Identify high priority and critical research needs, and 5) Promote interdisciplinary approaches to solving societal problems of waste disposal. Visit <http://conference.ifas.ufl.edu/landapp/>.

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## National Source Water Protection Conference

EPA announces this 2003 conference, "Protecting the Sources of the Nation's Drinking Water: Opportunities for Action", which will be held on June 2-4 in Washington DC. <http://www.epa.gov/safewater/protect/swpconf.html>

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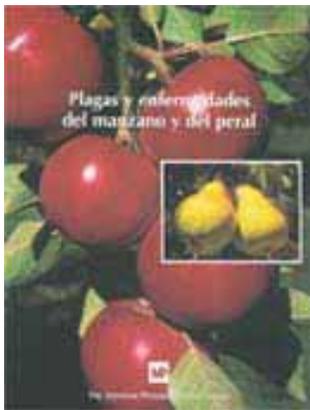
## Resources

### California Sustainable Agriculture Research and Education Program (SAREP)

Check out the Winter 2003 (Vol. 14, No. 3) issue of the (SAREP) triquarterly newsletter "Sustainable Agriculture" at <http://www.sarep.ucdavis.edu/newsletter/v14n3/>.

### Plant Disease Titles Translated

The *American Phytopathological Society* (APS) is a non-profit, professional, scientific organization dedicated to the study and control of plant diseases. They have several titles available in Spanish translation. View the titles at <http://www.apsnet.org/apspress/email/spanish.htm>



### Exploring Agriculture Sustainability

SARE announces the publication of a new resource entitled **Exploring Sustainability in Agriculture**, which profiles sustainable agriculture by providing snapshots of ten different producers from Oregon to New Jersey who apply sustainable principles on their

farms and ranches. The 16-page pamphlet includes a colorful annotated illustration of practices used on a model sustainable farm and a list of hints to help consumers make ecologically friendly choices when they buy food. See the bulletin at <http://www.sare.org/bulletin/explore/exploring.pdf>. SARE is part of USDA's Cooperative State Research, Education and Extension Service (CSREES). For more information about SARE's grant opportunities and resources, see [www.sare.org](http://www.sare.org).

### Agricultural Marketing Resource Center (AgMRC)

The AgMRC is a USDA sponsored center for value-added agricultural groups. Their web site <http://www.AgMRC.org> provides detailed information on market and industry developments, how to start a business, and information on writing feasibility, marketing and business plans. They are in the process of developing nationwide reference directories for value-added agricultural businesses and value-added agricultural consultants and service providers. There are currently 82 businesses and 178 consultants and service providers listed in these directories.

### Labor Management

The 2nd Edition of the book *Labor Management in Agriculture: Cultivating Personnel Productivity* is complete and can be downloaded at <http://www.cnr.berkeley.edu/ucce50/ag-labor/>

### Ag Help Wanted: Guidelines for Managing Agricultural Labor

*Ag Help Wanted* is an educational guidebook designed to assist every person who currently manages or expects to manage human resources on farms, ranches, nurseries, dairies, and other agricultural operations. The book can be used as a source of ideas for improving management policies or practices, an occasional reference in coping with problems that arise, or a base for systematic study of human resource management in agriculture. It presents principles, practical examples, regulatory considerations, and leads to more

references that help equip managers to make choices that are reasonable, legal, and ultimately effective for both their businesses and the people they employ. See [www.agehelpwanted.org](http://www.agehelpwanted.org).

### Agricultural Internet Marketing Guide

USDA recently released a new publication designed to assist agricultural producers in marketing their products via the Internet. *How To Direct Market Farm Products on the Internet* provides basic information to farm direct marketers who are interested in selling their products on-line or using a Web site to publicize their farm or products.

Of the estimated 168 million Internet users 16 years of age and older in the United States, approximately half say they shop on-line. The publication addresses issues to be considered before adopting the Web as a marketing tool, as well as tips on how to research the Internet market, set up a Web site, and market products on the Web. References, largely from the Internet itself, are cited to enable producers to undertake additional research. Find the book at <http://www.ams.usda.gov/tmd/MSB/internet%20marketingf.pdf>.

### The Overstory – Agroforestry in Action

The Overstory is a free noncommercial e-mail journal. Subscribers are agroforestry practitioners, researchers, professionals, and enthusiasts in over 160 countries. Each issue focuses on a concept for agricultural systems that integrate trees and other perennial plants. Recent topics include Ethnoforestry, Urban Forestry, Traditional Agroforestry Systems, Genetic Conservation, Farm Forestry, Nontimber Forest Products, and Agroforestry Information Resources. To view past issues, visit <http://www.agroforestry.net/overstory/osprev.html>.

### NW Direct Seed Conference

If you missed the 2003 Northwest Direct Seed Cropping Systems Conference and Trade Show in Pasco, WA on January 8-10, you can have the next

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best thing to being there — the detailed 120-page Conference Proceedings. The Proceedings provides an in-depth summary of the speaker presentations and is an excellent reference on new technologies for direct seed cropping systems. The Proceedings and other Conference materials are accessible on the [Conference Web site](#). Print copies can be ordered from the Website.

### **Watershed Information Network: [Watershed Atlas](#)**

This atlas provides a “catalog of geo-spatial displays and analyses of information and data important for watershed protection and restoration. You can use the catalog by geography, theme, key word, source/organization, and age of source data (under construction).” Themes include acid rain, air quality, birds, coasts, drinking water, endangered species, erosion, floods, lakes, law and legislation, and much, much more. Linked sites are annotated and contain contact person and email address.

### **Amber Waves**

Amber Waves is a new USDA magazine that presents a window into the broad scope of Economic Research Services’ research and analysis. The magazine covers the economics of agriculture, food and nutrition, the food industry, trade, rural America, and farm-related environmental topics. Available on the Internet and in print, it will appear five times a year (in February, April, June, September, and November). The Internet edition changes as new material is added. See <http://www.ers.usda.gov/AmberWaves/>.

### **Sustainably Grown Produce Higher in Anti-Oxidants?**

This is a short article in US NEWS about a report that says organic food is higher in antioxidants than conventional. Sustainably grown produce (fertilizers, but no pesticides) got the highest antioxidant ratings. <http://www.usnews.com/usnews/nycu/health/pulse/archive/030305.htm>.

### **One Stop Site to Comment on Federal Regulations**

[Regulations.gov](#) is the U.S. Government web site that makes it easier to participate in Federal rulemaking. The public can find, review, and submit comments on Federal documents that are open for comment and published in the Federal Register, the Government’s legal newspaper.

To find Federal Register documents currently open for comment, there are GO buttons on the top of every page. The “Submit a Comment on this Regulation” link allows one to express an opinion on a specific document. Alternatively, comments may be submitted directly to the agency through the PDF or HTML version.

### **Announcements**

#### **Graduate Assistantship - Cornell University**

Steven Wolf, Assistant Professor, Dept. of Natural Resources at Cornell University seeks applications from prospective graduate students interested in conducting interdisciplinary research on the NY maple industry. In the near future, he is looking for qualified and motivated students interested in an MS in the Dept. of Natural Resources. The research questions revolve around the organization of the NY maple industry and opportunities to support this form of forest farming. The work will require some familiarity with social science research methods, good writing and communication skills, and interest in forest management. (607) 255-7778, email [saw44@cornell.edu](mailto:saw44@cornell.edu), profile at <http://www.dnr.cornell.edu/people/faculty/profiles/wolf.html>

#### **New Farmers Market in Edmonds, WA**

The Edmonds Museum announces the opening of its new Garden Market in downtown Edmonds. The Garden Market opens on Saturday, May 10th in the Edmonds PUD parking lot at the corner of 5th and Bell Street. This new market is farmer/producer based

and is a scaled down version of the Summer Market. There will be 15-30 vendors selling nursery stock, vegetable starts, bedding plants, cut flowers, fresh early season produce from local farms, artisan breads, local honey as well as fresh jams and jellies produced by area farms.

The Garden Market operates Saturdays, 10 am - 3 pm, May 10th through June 28th.



### **Funding**

#### **Cooperative State Research, Education, & Extension Service.**

The Integrated Research, Education, and Extension Competitive Grants Program provides funding for integrated, multifunctional agricultural research, extension, and education activities. Funding is announced through a separate Request for Applications (RFA) for each program.

*Water Quality* - closing date: April 21, 2003. CSREES contact: [MIKE O'NEILL](mailto:MIKE O'NEILL) (202-205-5952 or [http://www.reeusda.gov/1700/funding/rfaintegrated\\_03.htm](http://www.reeusda.gov/1700/funding/rfaintegrated_03.htm)).

*Community Food Projects* - Closing date: April 14, 2003. CSREES contact: [Elizabeth Tuckermanty](mailto:Elizabeth Tuckermanty) (202-205-0241 or [http://www.reeusda.gov/1700/funding/rfacfp\\_03.htm](http://www.reeusda.gov/1700/funding/rfacfp_03.htm)).

**Submitting articles:** Submit articles electronically to [Doug Stienbarger](mailto:Doug Stienbarger) in MS Word or RTF formats. Photos and graphics are encouraged.

**Views:** The views expressed in this newsletter reflect those of the author(s) and not necessarily those of the sponsoring institutions.

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