

SUSTAINING THE PACIFIC NORTHWEST

Food, Farm, & Natural Resource Systems

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Thundering Hooves Farm: Land in Stewardship

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Joel Huesby, 40 years old and a fourth-generation family farmer, works land his great grandfather homesteaded in 1908. Joel, his wife Cynthia, their four children, his father and mother (Gordon and Lois), and his brother and sister-in-law (Bryan and Jenny) manage 400 acres of irrigated pasture and cropland in the Walla Walla Valley of eastern Washington. Through their business, *Thundering Hooves Pastured Finished Meats*, the Huesby's direct market pasture-ranged and pasture finished livestock and poultry raised in a humane, natural, low-stress environment without using hormones or antibiotics. They process their own poultry and livestock and sell their beef, lamb, goats, pigs, eggs, chicken, and turkeys to individuals, restaurants, and at farmers markets in the Walla Walla Valley and the greater Seattle area.

Thundering Hooves is a family business and Joel's family, parents, and brother and sister-in-law all live on the farm. The Huesby family is united, disciplined, enthusiastic, business-oriented, and successful in their farming. They created a meaningful and profitable life on the land by working with their community to protect their farm from development and by adopting more sustainable agricultural practices. To preserve their farmland, the Huesby's actively participated in their county growth management meetings. Through public comment, they successfully lobbied to rezone their area from 10 acres to 40 acres. To farm in a more sustainable agricultural manner, Joel adopted farming practices he felt were more in harmony with the environment. As a conventional commodity farmer in the late 80s and early 90s, Joel grew soft white wheat and lima beans, snap beans, and green peas for local canneries. He harvested good yields, but struggled to make a living when facing stagnant wheat prices, cannery problems, and ever-higher production costs. In 1993, Joel became active in the local wheat growers association and learned more about the political and economic climate of the wheat industry. Joel even received an award for outstanding service from the county wheat growers at their annual banquet in 1994. Ironically, this was the last year he served on the association since he did not see a strong future in commodity agriculture.



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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 Small Farms Team](#), the [WSU Small Farms Program](#) and the [Water Quality Management Team](#).



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In the fall of 1994, Joel had what he describes as an epiphany: a realization he needed to search for ways to make his farm more sustainable. In his church, where he is a leader and a regular participant, Joel learned that the law condemns and that forgiveness saves. He applied what he had learned about moral law and natural law to his farm. "When *any* law is broken there are inevitable consequences," he says. This led him to a new philosophy and a new way of thinking about how to treat his land. Joel looked for ways that nature would work for him. He felt that not everything from the past should be abandoned just because it is old. Nor should anything from the present necessarily be embraced just because it is "new and improved." He concluded that farm animals harvesting sunlight through plants were the most efficient use of energy when all costs were counted.

Joel first changed his farming practices by rebuilding the health of his soil with organic matter. His fields and pastures have been free of commercial fertilizers and herbicides for ten years now. In 1999, he contacted the personnel at the local landfill to discuss the practice of using precious landfill space for autumn leaves and yard debris when those wastes could have a beneficial agricultural use. This led Joel to become a member and agricultural advisor of the Walla Walla County Solid Waste Advisory Committee (SWAC). He learned that a new paper recycling plant near Wallula was dumping 250 tons of "waste short paper fibers" daily at a landfill 80 miles down the Columbia River and paying exorbitant tipping fees. After testing for heavy metals, dioxins and other volatile compounds, a permit was issued by the Washington State Department of Ecology that enabled Joel to land-apply the paper fibers on his farm. Every two and a half hours, twenty-four hours a day, seven days a week for 18 weeks, a semi truck dumped twenty-five tons of paper waste at designated places in Joel's fields. This totaled over thirty-one thousand tons of paper fibers with the consistency of wet paper towels.

It took two passes in first gear with a large manure spreader to spread the

paper in a two-inch mulch layer on the soil. The paper provided five benefits for the soil: 1) carbon, the fuel of the soil; 2) secondary nutrients including calcium, magnesium and sulfur; 3) water retention from an organic covering (people measure how much water goes in but not how much comes out of unprotected soil); 4) weed suppression (annual weeds were smothered by this organic mulch); and 5) erosion control. Wind and water no longer eroded his topsoil as it did on other fields in the area. And over 1,250 semi truckloads of expensive landfill space was used for true waste. Four years later, the difference between the grasses on the soil where the paper was applied and where it was not remains quite evident. The productivity of the land is evident as one sees, feels, and smells the life that has returned to the soil.



Joel with pasature finished cattle

Joel continues to rebuild the broken connections between the soil, plants, animals and people that he believes are the result of an inadequate modern industrial agriculture model. Joel uses direct marketing as one method to forge new connections. The *Thundering Hooves* booth at the Walla Walla market raised the bar for direct marketing in the region. Cynthia, Joel's wife, prepares a gourmet burger featuring locally grown lettuce, onions, tomatoes, a locally baked whole-wheat bun, and their pasture-finished ground beef patty. Joel provides free samples so customers can compare *Thundering Hooves* ground beef to commercial ground beef. He invites people to taste for texture and flavor differences, but most importantly, to feel the pasty film of fat from grain fed commercial beef. He reminds customers that congestive heart disease is today's number one killer of Americans. He also likes to tell them "we

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are what we eat, and cows are what cows eat.” He also demonstrates the difference between a *Thundering Hooves* pasture ranged egg and a commercial egg. He breaks one of each into a cup: the pastured egg yolk is orange and the white is thicker. The Huesbys’ eggs also have different baking qualities and cholesterol levels. For four weeks



Free range turkeys

during the summer of 2003, local chefs who feature Huesby’s meats demonstrated how to prepare and cook their products. This led to conversations with the downtown foundation about expanding the farmers’ market facility to include a commercial kitchen. It takes three family members to operate the Huesby’s market booth and often one of their children helps out. Joel and Cynthia believe it is important to teach their children everything, from communicating with the public, to making change, to living out their farming philosophy in everyday life within the community.

Today, Joel serves on several committees and boards promoting environmental stewardship and direct marketing. Joel served as the Master of Ceremonies at the 2003 Washington State Family Farm Summit and a workshop leader at Oregon Rural Action’s convention. Most recently, MSNBC featured *Thundering Hooves* in the series “Food: Where it Comes From,” on March 1, 2004.

Joel and the Huesby family can be reached at [Thundering Hooves Farm](#), 1511 Fredrickson Road, Touchet, WA 99360; ph: 866-350-9400; fax: 509-522-9444; Seattle ph: 206-241-7537.



WSU Small Farms Team
On The [Web](#)

Organic Certification in the United States and Europe

[Miles McEvoy](#), Organic Program Manager, Washington State Department of Agriculture

The demand for organic food continues to increase in the United States and Europe. The U.S. requires organic certification to the National Organic Standards for all organic sales. Europe has similar organic standards but separate certification requirements that must be met in order to gain access to the European organic market.

U.S. organic standards

The U.S. fully implemented the National Organic Program (NOP) on October 21, 2002. This federal law requires all organic food products to meet the same standards and be certified under the same certification process. All organic producers and handlers must be certified by accredited organic certification agencies unless exempt or excluded from certification (those with under \$5,000 in sales and retailers).

The NOP prohibits states from having organic standards that exceed the National Organic Standard. The law also prohibits non-profit organizations, for-profit certification groups, and others from developing alternative organic standards or from exceeding or granting exceptions to the federal organic standards.

All organic food products must be certified to the National Organic Standards (NOS) by NOP accredited certification agencies in order to qualify to use the organic label. Both state agencies and private organizations may be NOP accredited. The Washington State Department of Agriculture (WSDA) is a NOP accredited state certification agency. All organic producers and handlers must implement an Organic Production and Handling System Plan that describes the practices and procedures that the operation utilizes to comply with the organic practice standards. Organic practice standards require protection of natural resources, including soil and water quality, crop rotation, an IPM approach to pest management, and handling practices that prevent commingling and contamination.

Organic producers and handlers must complete an Organic System Plan that describes the operations practices, lists all materials utilized in the operation, and describes the recordkeeping system utilized to track organic products produced or handled by the facility.

The NOS establishes the National List, which allows all nonsynthetic (natural) materials, unless specifically prohibited, and prohibits all synthetic materials unless specifically allowed. Approved post harvest materials include biopesticides, sodium hypochlorite, chlorine dioxide, hydrogen peroxide, periacetic acid, citric acid and lignin sulfonate. Natural waxes such as carnuaba and shellac are allowed as long as all the ingredients are natural, including any emulsifiers.

The NOS establishes four label categories based on the percentage of organic ingredients in the final product. These categories include “100% organic”, “organic”, “made with organic”, and “less than 70% organic ingredients.” Each category has specific requirements regarding minor ingredients, processing aids, and labels. Organic labels must state which organic certification agency certified the product. The USDA organic logo and the certifier’s logo (e.g. WSDA’s organic logo) are not required to be on the label.

Foreign organic standards

Many countries have established organic standards and have specific requirements that must be met for imported organic products. Under European organic standards, imported organic products must be certified by an ISO Guide 65 accredited certifier. ISO Guide 65 is an international standard for certification agencies. In Japan, all organic products must be certified by an agency accredited by the Japanese Ministry of Agriculture, Forestry and Fisheries. In Quebec, all organic products must be certified by an agency accredited by the Quebec accreditation authority.

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European Organic Standards

The European organic standards are quite similar to U.S. organic standards with a few exceptions. European standards prohibit the use of sodium nitrate, gibberellic acid, and antibiotics. Organic producers using these products under the NOS are not eligible to ship their products to the European Union. European standards also prohibit post harvest use of chlorine and lignin sulfonates.



Under the European Union organic standards, each member state (e.g. Germany, France) establishes a competent authority to regulate organic food products and provide licenses to importers that authorize them to import organic products. Importers must provide a list of the producers and handlers that are supplying the organic products. Each producer and handler must be certified by an ISO Guide 65 accredited certifier. The foreign certifier must provide a Compliance Statement for each organic producer and handler. Once the importer obtains the import license they can begin to import organic products. Each organic shipment must be accompanied by a Certificate of Inspection.

The British system

Valued at 1.6 million U.S. dollars in 2002, British organic agriculture comprises 4.3% of British farmland, or about 1,000,000 acres. Eight percent of British consumers make sixty percent of the organic purchases and 82% of organic food is sold in supermarkets (US is 55%), of which 65% is imported. British consumers choose organic food for taste first, followed by health reasons and the absence of pesticides. Organic food is the fastest growing food sector in recent history, though growth has slowed from 40% in 2000 to 15% in 2003.

In the United Kingdom, the Department of Environment, Food and Rural Affairs (DEFRA) is designated as the competent authority. Under the European organic regulations (EEC 2092/91), competent authorities may establish standards that exceed European organic standards. DEFRA

established higher standards under the United Kingdom Register of Organic Food Standards (UKROFS). The higher standards relate primarily to organic livestock. DEFRA has authorized 11 organic certifiers within the UK as of 2003. DEFRA also regulates the importation of organic food products from non-EU countries. DEFRA approves foreign certifiers as part of the import licensing scheme and has approved WSDA, Oregon Tilth, and QAI as approved foreign certifiers.

Sainsbury's – a British retailer

Sainsbury's organic program began in 1986. Sainsbury's mission is to be customers' first choice for organic food in the UK. They have 27% of the British organic market share and expect 200 new products in 2003. Sainsbury's recognizes the slowing growth in the organic market during the past two years, but hopes to maintain their lead by focusing on three key policies: UK sourcing, price, and integrity.

Sainsbury's intended to source 100% of the organic meat and dairy products from British organic farmers by January 2004. By July 2003, they had achieved this goal with the exception of cheese. They also have pledged to increase their overall supply of British organic food from 40% to 55% by 2004.

Sainsbury's believes prices should reflect the true cost of organic production and customers should be aware of the true cost of organic food. They do not subsidize the retail price of organic foods nor do they make additional profit on organic products. They are working to reduce the costs of organic foods through efficiencies within the supply chain.

A few organic food scandals in Europe caused Sainsbury's to be very concerned about the integrity of organic food products. In Italy, a produce distributor sold over 32 tons of organic produce determined to be fraudulent. In Germany, organic livestock feed became contaminated with a banned pesticide in a storage facility. These and other European food safety scandals (e.g. BSE, or mad cow disease) motivated Sainsbury's to focus on

maintaining customer trust and integrity in their organic program. Sainsbury's customers expect organic certification to be harmonized and standards to be equivalent. Sainsbury's customers often ask how can they have confidence in imported food and know that it's truly organic. Sainsbury's commitment to integrity has led them to support the International Federation of Organic Agriculture Movements (IFOAM) accreditation program. Since January 1, 2003 they require all of their label suppliers be certified by an IFOAM accredited certifier. Sainsbury's is the only IFOAM member among major UK supermarkets and believes this commitment to IFOAM provides a competitive difference to attract new consumers concerned about organic integrity.

IFOAM. IFOAM is an international membership organization that promotes organic agriculture worldwide and coordinates the worldwide organic movement through numerous international, continental, and regional conferences, as well as its publications. They have 850 members in over 50 countries.

IFOAM created an accreditation program whose purpose is to set an international organic standard acceptable worldwide. Sweden and certain European buyers require IFOAM accreditation. The IFOAM accreditation program helps in other European markets as well as in Japan, Korea, Australia, and New Zealand. The International Organic Accreditation Service (IOAS) manages the IFOAM accreditation program. There are currently 28 IFOAM accredited certifiers representing over 50% of the globally traded organic food products. In the United States, CCOF, QAI, OCIA and FVO are IFOAM accredited. WSDA applied for IFOAM accreditation in June 2003 and plans on obtaining IFOAM accreditation for the 2004 harvest season.

Additional information about the NOP, European organic standards, and certification is available from WSDA at 360-902-1805 or on the web.



Local and Direct Food Purchasing in Washington

Marcia Ostrom, Director,
WSU Small Farms Program

Consumer Food Buying Choices

Growing numbers of Washington farmers seek to capture greater values for their products through direct and local marketing. A recent WSU telephone survey in four representative counties assessed the extent of consumer demand for direct and local farm products in King, Skagit, Chelan, and Grant counties. Consumers in these counties also answered questions about the motivations behind their food purchasing decisions and their interest in increasing direct purchases from farmers in the future.

Overall, it is common for Washington consumers to make at least some purchases directly from local farmers. More than a quarter of the consumers surveyed reported buying products directly from a local farmer twice a month or more often during the growing season. Another 43% of consumers said that they made such purchases, but only once a month or less often. Just under a third of consumers never purchase products directly from farmers. Urban county residents were less likely to make direct purchases from local farmers.

Consumers Want to Increase Direct Purchasing

Most consumers said they would like to purchase more products directly from local farmers, but interest levels varied substantially by product. Over 80% of consumers expressed interest

Table 1: Frequency of Direct Purchasing from Farmers

Never	31%
Once a month or less	43%
Twice a month or more	26%

in directly buying more fruits and vegetables, while far fewer showed interest in directly purchasing animal products like eggs, dairy, and meat. Nevertheless, the survey indicated substantial market demand for each of these product types.

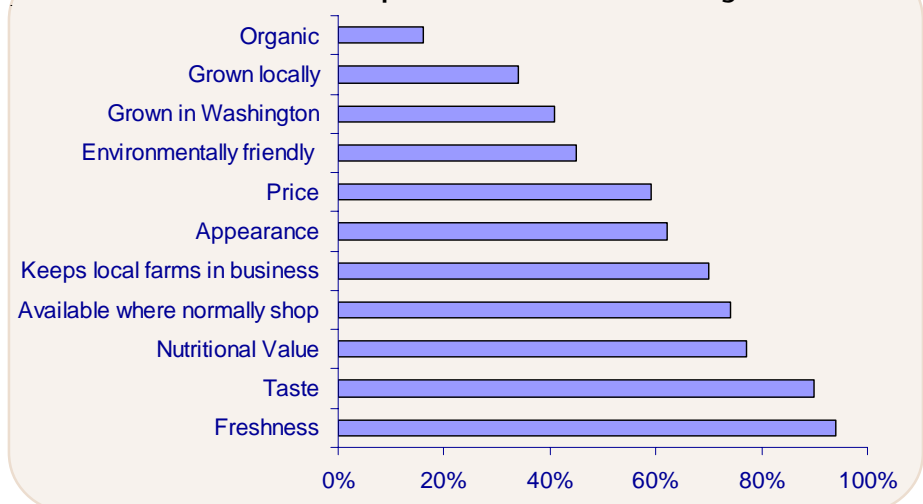
Consumers Value Quality

The survey asked a variety of questions about consumers' criteria for making food purchases. Chart 1 below ranks attributes by their importance to the respondents. Data indicate top consumer values comprise freshness, taste, and nutritional value. For the majority of the respondents, convenience overshadowed price as a factor. Over 77 percent said that they would be willing to pay more for locally grown foods if they were available. Cost was more important for consumers in rural counties. Both rural and urban residents expressed an equal concern about "environmental friendliness", while urban consumers were more concerned about whether products were organic. All consumers considered buying *local* food products a low priority, unless it would help keep local farms in business. When asked if "keeping local farms in business" was important, twice as many responded affirmatively. Urban residents were less likely to value keeping local farms in business than rural residents.

Table 2: Percent Interested in Increasing Direct Purchase

Vegetables	82%	Fruits	81%
Eggs	52%	Dairy	44%
Beef	36%	Poultry	34%

Chart 1: Relative Importance of Food Purchasing Criteria



The data from rural and urban consumers suggest that consumer demand varies far more regionally and culturally than mass market theories would predict. Nevertheless, demand for high quality products remains strong across all regions.

In comparing the views of consumers and farmers on important farm policy issues, significant areas of convergence and divergence emerge. Consumers are slightly more supportive of controlling development in important agricultural areas than are farmers, while a majority of both groups agree these measures are essential. Consumers tend to think free trade agreements will help them, while many farmers do not think it will help them. Both groups overwhelmingly support a "Grown in Washington" label. However, 94% of consumers think such a label would help producers, while only 41% say this is an important food purchasing criteria for them.

This research project was funded by the W.K. Kellogg Foundation and the Washington Farming and the Environment Project in 2002. More details can be found at <http://www.crs.wsu.edu/outreach/rj/agsurvey/index.html>.



What to Look for When Buying Hay

Gary Fredricks, Dairy and Livestock Extension Educator

Assessing Forage Quality

How can you tell if you're buying good hay? There are several things you look for when inspecting hay that relate to quality, including:

- Color
- Maturity
- Number of leaves vs. stems
- Number of weeds
- Moisture content
- Palatability

Color. The first indicator of quality hay is its color. Good quality hay will have a nice green color, neither yellow nor brown. Good hay color tends to be associated with higher vitamin, protein, and mineral levels. An overall brown color indicates more mature hay and a corresponding lower quality.

Maturity. Before examining hay for maturity, it is necessary to first understand what plant maturity means in terms of forage quality. Grass and legume plants are cut to make hay, and plants are made up of leaves and stems. Leaves contain most of the plant protein and the highly digestible fiber easily converted to energy. Soft and flexible, the young leaf is low in cellulose. Cellulose provides rigidity to the cell wall. Cellulose predominates in the stem because it needs the rigidity to allow the plant to grow upright. Cellulose yields low energy and does not break down easily in the animal's digestive system. After a plant emerges and begins to grow, the weight of the leaf as a percentage of the total plant is high, while the percentage of stem is low. As the plant matures, the percentage of leaves decreases while the percentage of stems increases. Thus, the more mature the plant, the lower the percentage of leaves which contain most of the protein and energy in a plant.

When evaluating the hay for maturity, look for the number of leaves versus stems. As explained above, you want to see more leaves than stems. As the number of stems increases, the desirability of the hay goes down. Also remember that the longer the leaf

length, the more mature the hay and the lower its quality. In addition, the presence of seed heads in the bale indicates a very mature hay with lower energy and protein values.

Number of Weeds. Be sure to look for weeds in the hay. You do not want the hay to contain any weeds. Weeds possess little nutritional value, energy value, or protein content. The more weeds present in the hay, the lower the quality of the hay. Some toxic weeds present a health danger to the animal consuming the hay. Toxicity depends on the type of weed, amount present in the hay, and how much is eaten over what period of time.

Moisture Content. Moisture content is always a concern when looking at baled hay. If hay was baled when it was still wet, you may not see the problem on the outside of the bale. However, inside the bale, the moisture and darkness will enable mold to grow, and the presence of mold raises three concerns. First, mold feeds on the hay's nutrients, lowering the protein and energy content of the hay. Second, mold can release toxins (poisons) into the hay which may cause digestive problems in your animals when they eat the hay, and may cause pregnant animals to abort. Third, moldy hay generates heat and can spontaneously combust. Unfortunately, you must break open a bale of hay to determine if it is moldy.

Palatability. Palatability describes the animal's desire to eat the hay and is analogous to comparing spinach and pizza: the spinach has more nutritional value, but the pizza gets eaten first. Good feed quality does not mean much when your animals will not eat the hay. Younger, leafier hays which are higher in protein and energy do tend to be much more palatable. Browsers eat all types of hay, but will certainly prefer younger, more leafy hay over old and more mature hay.

Measuring Forage Quality

To measure hay quality, have a sample analyzed at a commercial laboratory. Ask the laboratory to analyze the percent dry matter, CP (Crude Protein), ADF (Acid Detergent Fiber), NDF (Neutral Detergent Fiber), and mineral con-

tent. Percent dry matter tells you the moisture content of the hay. Good quality hay should be more than 90% dry matter, which means that moisture should be less than 10%. If dry matter is less than 90%, expect problems with forage quality and long-term storage as the hay will likely mold in a few months. CP estimates the amount of protein in the hay and should match the animal's dietary needs. Extra protein is not easily converted to energy; it cannot be stored by the animal and is lost in the urine. Thus, if your animal needs 12% CP and your hay is 20% CP, the excess protein is helping the grass to grow instead of your animal. NDF measures plant fiber content and is closely associated with feed intake. ADF measures the cell wall content (mostly cellulose) and relates to feed digestibility (how much of the feed is broken down within the animal). As the plant matures, NDF and ADF values increase as



the plant cellulose content increases, indicating poorer quality hay. A good hay quality will have an NDF value of 50% or lower and an ADF value of 40% or lower.

Summary. You can make an educated judgment about hay quality by looking at it. Buying poor quality hay is a bad bargain. Saving a couple of dollars when you buy hay means you will need to feed more grain to compensate for the poor feed quality of the hay, and feeding grain is more expensive than feeding hay. Feeding high quality hay saves you money in the long run and is worth the investment. By learning how to visually assess hay quality, you can make your animals healthier, more fit, and save money.



Farm Family Support Network

[Peter Rodionoff](#), Coordinator, WSU Farm Family Support Network



The *Farm Family Support Network* comprises a network of consultants trained by Washington State University Extension to assist farm families experiencing business and/or family stress or looking for solutions to any

number of issues. Consultants help families gain a clear understanding of their current situation and the community resource options that are available to meet the goals of their farm family. Consultations are free and confidential. The USDA Risk Management Agency funds the Network through grants.

Rapidly changing conditions profoundly affect Washington's farmers. Factors such as evolving world markets, U.S. fiscal policy, overproduction, and the recent collapse of the Asian economy force farm families to deal with unprecedented challenges. As farming becomes increasingly a "business" rather than a "way of life," many conventional farm management strategies no longer work. The network offers a statewide service for agricultural producers similar to those offered in the mid-western and eastern states since the mid-eighties.

Services already provided to Washington farmers include:

- Helped a farmer obtain a value-added grant;
- Obtained pro bono legal services to forestall foreclosure on home and farm;
- Provided a widow information to meet her goal to move closer to grandkids (e.g., selecting a real estate agent, subdividing property regulations, and names of auctioneers);
- Helped evaluate financial feasibility of purchasing an orchard;
- Connected farmer with Farm Credit Services to obtain an operating loan to allow continued operation and production of first value added product (cheese).

A related program, the *Smart Money Grower Series*, helps farmers understand the risks associated with farming. As times change, the family farmer must adjust to these changes in the operation. The farmer of the future is a *Smart Money Grower* with a clear understanding of all of the risks s/he faces. Risk can be divided into five general categories: financial, production, marketing, legal, and human resource. The *Smart Money Grower Series* offers free two-hour workshops designed to address the five general categories of risk and are meant as a "tweaking" of an operation, not an "overhaul." These are currently held in Chelan, Douglas, and Okanogan Counties. See the FFSN [web site](#) for contact information.



Cultivated Wild Rice

[R. Karow](#), [P. Hayes](#), & [D. Ehrensing](#)

This article originally appeared as an OSU Extension Service Crop Science Report, reprinted here with permission of the authors.

[Editors note: *The domestication of wild rice and the ensuing proliferation of cultivated wild rice production generated controversy with Native Americans, especially the Anishinabe and other tribes of the upper Mid-west and Canada. The controversy involved using the term "wild rice" for cultivated varieties and how the sales of cultivated wild rice severely affected the economies and cultures of certain Native American groups. For background, see the September 1998 article, **Wild and Wilder. (Wild Rice)**, in [Natural History](#) or the [Minnesota Wild Rice Management Planning Project bibliography](#).*

What is cultivated wild rice?

A tall, aquatic grass native to the Great Lakes region of the U.S. and Canada, wild rice (*Zizania palustris*) is not closely related to common rice. Wild rice constitutes an important part of the religion and diet of many Native American tribes, especially in the Midwest. For thousands of years, tribes have carefully managed wild rice ecosystems in the north central United States and Canada for optimal production. Native Americans traditionally manually harvested, collected, and dehulled the seeds as part of annual harvest celebrations. The cultivated version is a summer annual grown commercially in shallow lakes or man-made paddies. The seed germinates in the spring and is harvested by boat or combine in late summer. After harvest, the large cultivated wild rice seeds are steamed, dried, dehulled, and cleaned to produce the valuable dark brown grain marketed around the world.

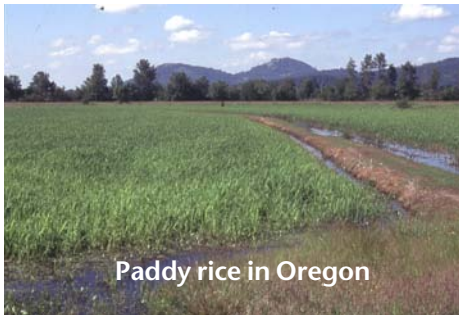
Although hand harvested in lakes for thousands of years through to the present, paddy production and combine harvesting developed in Minnesota only after World War II, and was not introduced into California until the 1970's. Commercial harvesting in Oregon began in 1991 and the first Oregon processing plant was built in 1994 to serve the small, but steadily growing market for cultivated wild rice.

Domestication of cultivated wild rice began only 30 years ago, so the crop still has many wild characteristics. Varieties suitable for paddy production are termed shatter-resistant, however, shattering losses are still as high as 30 percent. Lake varieties of cultivated wild rice are not shattering-resistant. Under normal harvest conditions, enough seed shatters to reseed most fields. Cultivated wild rice seeds also require several months of chilling to break dormancy before they will germinate. Chilling can be accomplished in the field or with cold storage.

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How is cultivated wild rice grown?

Most cultivated wild rice production in Oregon occurs in paddies constructed by diking existing fields considered marginal for other crop production due to poor drainage or heavy soils. In general, cultivated wild rice does well in fields with thin topsoil and heavy clay subsoils that minimize water and nutrient losses from the paddy. Dikes 24" to 30" high built on the contour have worked well for cultivated wild rice production. Costs for diking range from \$200-\$500 per acre, depending on slope of the fields. Careful paddy planning and design is essential for efficient production.



Paddy rice in Oregon

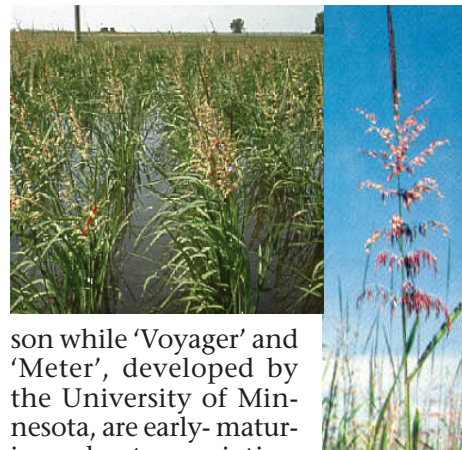
Although cultivated wild rice growers in some states pump large amounts of water, most Oregon growers store surface runoff in paddies to produce the summer cultivated wild rice crop. Maintaining water 18" to 24" deep in paddies during the winter controls invasive weeds and discourages waterfowl that eat cultivated wild rice seed. On heavy soils, this amount of water is enough to sustain the crop and provide for evaporation from the paddy. A supplemental water supply from wells or ponds provides insurance against weather extremes or problems with dikes. Cultivated wild rice does not grow in water with high salt level.

Conventional wisdom indicates cultivated wild rice seed must be held at a moisture content greater than 28 percent or germination will be significantly reduced. Before germination, seed also requires three to four months of chilling to break seed dormancy. Seed is often stored in (or under) water, and then broadcast into the flooded paddy in spring using a boat-mounted spin spreader.

Cultivated wild rice fields in western Oregon allowed to completely dry in the fall have produced thick rice stands the following spring. Contrary to conventional wisdom, seed shattered from the previous crop germinated after drying. Subsequent trials confirmed that cultivated wild rice can be dried without killing the seed. Dry seed can be broadcast and harrowed into a field before fall rains fill the paddy. Using this method, seed dormancy breaks by chilling in the field without the added cost and problems of cold storage. Commercial paddies successfully used this technique in trials for three years.

A final plant population of 4 plants per sq ft is desired in seeded fields. Given low seed germination and that only 50-60% of germinated seeds establish plants, seeded populations generally range from 16 to 24 seeds per sq ft. Seeding rates in new paddies range from 100 to 200 lb/ac depending on seed quality. Although cultivated wild rice will reseed itself, some commercial growers commonly overseed 50 lb/ac annually to ensure good stands.

Varieties. Several varieties are available. 'Johnson', tall and late-maturing, was the first shatter-resistant variety released. 'K-2' is medium in height and matures early- to-mid sea-



son while 'Voyager' and 'Meter', developed by the University of Minnesota, are early-maturing, shorter varieties. Initial experience suggests varieties like Voyager and Meter will perform best under Oregon conditions.

Cultivated wild rice seeds germinate rapidly as water begins to warm in spring. The first leaves grow under

water, but the plant soon produces floating leaves readily seen on the water surface. The remaining leaves are large aerial leaves from 15-30" long and 0.75-1" wide. Plant stems grow up to 0.5" in diameter and 5 to 10 feet tall. Cultivated wild rice plants can have many tillers, depending on stand density. Since tillers mature at different rates, cultivating a fairly dense, uniform stand will reduce tillering.

Cultivated wild rice heads, called a panicle, are similar to those of oats. The bottom portion of the cultivated wild rice panicle bears male flowers while the top part bears female flowers. Female flowers emerge and mature before male flowers, ensuring cross pollination. Like oats and barley, cultivated wild rice seed is not free-threshing and has an adhering hull which must be removed during seed processing. Green in color when mature, seed is normally harvested at a moisture content of 35-40%.

Oregon growers have generally found fall fertilizer application most effective for cultivated wild rice production, but this technique relies on dikes and heavy clay soils in the paddy to minimize nutrient leaching. Nitrogen fertilizer is broadcast at a rate of 70-75 lb/ac and lightly disked into the paddy prior to the onset of fall rains. Other nutrients such as P and K are usually not applied unless soil testing indicates a deficiency. Cultivated wild rice is susceptible to zinc deficiencies. Although tissue testing is used in California to determine the levels of zinc in cultivated wild rice, no cases of zinc deficiency have been reported in Oregon.

No herbicides are registered for use on cultivated wild rice, and the crop is susceptible to injury from a wide array of herbicides. Several native aquatic weeds become a problem in Oregon when paddy water levels are less than 12" to 18". While common in other states, midge and rice worm have not yet become major pests in Oregon. Algal blooms occur in warm-climate paddy production and can quickly smother cultivated wild rice seedlings. Copper sulfate application may be required to control algae.

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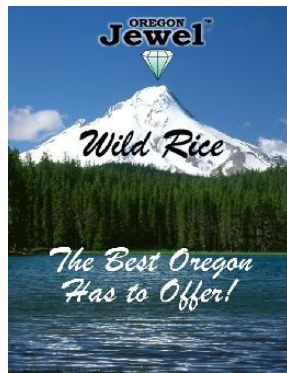
Diseases, especially *Helminthosporium* brown spot, pose significant problem in Great Lake paddy production but have been insignificant in northern California. *Helminthosporium* traces found in Oregon have not yet become a serious problem.



Birds pose problems in all production areas. Bird damage occurs when seeds are germinating and emerging from the water (geese and ducks)

or once grain is near maturity (black birds and other seed feeders). Bird control can cost over \$50 per acre. Black birds have not been a problem in Oregon to date, but are likely to become a problem as acreage increases.

Harvest usually occurs in Oregon from late-July to mid-September (about 120 days after germination with grain near 40% moisture). Minnesota research indicates cultivated wild rice requires 2900 growing degree days (base 40° F) to mature. For combine harvest, fields are drained 2 to 3 weeks prior to harvest to allow the soil to dry. While most fields in Oregon are harvested using rice combines from California, conventional combines work if the field is dry enough. The decision to send the seed for processing or keep it for planting seed must be made at the combine. Timely processing is critical. Processed seed is put in tote bins, covered with water, and allowed to ferment for several days prior to processing. Fermentation allows color and flavor development and helps degrade hulls. In commercial operations, grain is then parched in gas-fired ovens, run through a dehuller, cleaned, size-sorted and packaged.



Wet grain yields (green rice) average near 1000 lb/ac in Northern California, while yields in Oregon range from 1000 to 1700 lb/ac. Priced on a green rice basis, growers earned 45 to 70 cents per pound in recent years. A sample production budget is shown in Table 1. Expenses shown are typical, but prices may vary significantly depending on individual circumstances. Cultivated wild rice is not a “get-rich-quick” crop, but may be a viable alternate crop for some growers.

During the first years of production, Oregon growers accessed seed, processing, and markets through the Fall River Cultivated wild rice Growers Coop in Fall River Mills, CA. In 1994, a cultivated wild rice processing plant was constructed near Brownsville, OR to provide local processing and cleaning. This plant can process about one thousand acres of cultivated wild rice pro-

Table 1: Sample cultivated wild rice variable cost budget [1]

	\$/acre
Site preparation (diking, leveling) [2]	100
Field preparation (disk 2X)	10
Seed (150 lbs initial + 50 lb/yr @ \$1 per lb) [3]	80
Broadcast seed	5
Fertilizer (150 lb urea @ 12¢ + \$4 appl)	22
Bird Control	25
Combine	75
Haul	10
Total variable expense	327
Income (1000 lb @ 60¢) [4]	600

[1] Assumptions: Field size is 5 acres. There are adequate P and K levels in soil. The paddy is rain fed (supplemental water with associated pumping costs will be needed in some situations). There is no need for insect or algae control (pesticide costs could be as much as \$50/ac). Grain hauling boxes can be borrowed from the coop.

[2] Site preparation: \$500/A over 5 year period.

[3] Since rice reseeds itself, the \$150/A initial cost of seed is spread over 5 years. Annual overseeding at 50 lb/A.

[4] Commercial yields range from less than 300 to over 2000 pounds per acre.

duction and the plant managers are interested in helping to expand Oregon production. Other companies in the area are also investigating cultivated wild rice processing and packaging facilities. Growers interested in cultivated wild rice production should contact their local Extension Educator to obtain additional information.

Source: E.A.Oelke et al., *Wild Rice Production in Minnesota*. University of Minnesota Extension Bulletin 464, 1982.



Why Sustainability is Catching On: A Look at WSU's Center for Sustaining Agriculture & Natural Resources

Chris Feise, Director, WSU CSANR

This is an exciting time for all of us engaged in sustaining agriculture in the region. Washington State University's Center for Sustaining Agriculture & Natural Resources (CSANR) is gaining recognition here and around the country. Last year, CSANR received a \$3.75 million grant from the Paul G. Allen Charitable Foundation for our *Climate Friendly Farming* project. Our research and education programs on organic farming have received national recognition and our leadership on sustainable agriculture has been linked to a larger effort by the governor to encourage sustainability across the state.

CSANR succeeded in leveraging investments of both dollars and people because its orientation toward sustainability provides a framework for decision-making that offers society new strategies for managing change in agriculture. There are several reasons for this.

Sustainability demands interdisciplinary approaches. Since the inception of the land grant universities, science has been its dominant expression. Disciplinary scientific research created a vastly different kind of agriculture than that practiced 100, or even 30, years ago. We now produce far more food than we need to meet the nutritional needs of our population, yet Washington and Oregon rank among the highest nationally for hunger, a problem especially acute in rural communities. Household income has been steadily falling in these same communities. Globalization threatens further decline in the so-called “agriculture of the middle”, those small and mid-sized family farms whose stewardship of the land is critical to the future of our natural resources.

While there will always be a role for disciplinary science, the issues we must address in the next decades defy solutions based on any single discipline. As an academic center, CSANR provides a nexus for interdisciplinary programming that reaches across the entire university. Sustainability demands such an approach, since it strives to balance the economic, environmental and social consequences of our actions.



Our *Climate Friendly Farming Research & Demonstration Project* showcases interdisciplinary cooperation in a comprehensive research project. This project aims to help farmers ease global climate change by reducing farm-produced greenhouse gases. Researchers will assess dairy, irrigated crop, and dryland grain farming systems to determine how each contributes to global warming. The research could soon make it possible to compensate farmers for offsetting the pollution caused by urbanization and industries.

Sustainability engages both farmers and consumers. The CSANR charter mandates that we address the needs of both farmers and consumers. Since the center opened in 1991, the need for public engagement in agriculture has only become more apparent. Sus-

taining agriculture will be impossible unless we know what consumers are willing to pay for in terms of their food dollars and public support. An expanded concept of “value-added” is in order, as our dean, R. James Cook, has pointed out. Value-added means more than simply increasing profits to farmers through processing and packaging of raw products. Its emphasis on sustainability uniquely positions CSANR to show non-farming audiences how sustainable agriculture adds value to the economy, society, and the environment. The loss of agriculture from a community is unsustainable when considering these three factors together and represents an irreversible case of “value-subtracted.”

CSANR team efforts in *Community Capacity Building and Conflict Resolution* help individuals and organizations develop strategies that maximize the human capital and natural resources found locally. Our *Small Farms Team* offers a course and certificate program for family farmers including courses on agricultural entrepreneurship, community food systems, and sustainable small-acreage farming. The team also plans to offer courses to Latino and

East Asian new immigrant growers, two of the fastest growing segments of new farmers in Washington. Team members also support farmers’ market managers in building their capacity. A team-led effort in King County and at the state level proposes to develop “food policy councils” to bring together decision-makers around issues like food production, hunger, and institutional purchasing.

Our work on the *Conservation Security Program (CSP)* also demonstrates our commitment to develop direct connections between consumers and farmers. This new federal entitlement program in the 2002 farm bill will potentially transform American agriculture by compensating farmers for the public good that well-managed agriculture has always provided, but never gotten paid for. When fully developed, CSP may provide farmers a new income stream for farming practices such as integrated pest management, cover cropping, and weed control. CSANR

affiliates are working to make Washington farmers among the first beneficiaries of this program.

Sustainability fuels demand for university programs. To survive, Washington agriculture requires substantial investment in research and scholarship to develop new production, marketing, and policy alternatives. These alternatives must foster a vibrant regional agriculture even in the midst of a profound restructuring of the global economy. CSANR is working to meet this challenge. CSANR’s *Biologically Intensive & Organic Agriculture (BIOAg)* program encompasses a range of new research projects, including development of mustard cover crops, new applications of direct seeding, and the use of beneficial nematodes for pest control. A recent federal grant to BIOAg is helping WSU develop certified organic experimental land for major crops, enhance organic seed production, and research the effects of production practices on food quality, nutrition, taste, and marketing.

I encourage those interested in learning more about CSANR programs to contact us at csanr@wsu.edu, call 253-445-4626, or visit our website at <http://csanr.wsu.edu>.



Highlights

Winter Field Day - Cover Crops

The clouds parted for the February 18 small farms winter field day at the WSU Puyallup Research and Extension Center’s Small Farms Research and Demonstration site. Over 40 farmers and master gardeners braved threatening weather to learn about the



Craig Cogger discusses cover cropping.

Continued on next page

progress of winter cover crop experiments at the six-acre site. Attendees saw firsthand how the various cover crops survived field traffic during harvest and the cold snap of January.

WSU soil scientists Craig Cogger and Andy Bary described current experiments, including interseeding cover crops for pest suppression, interseeding to establish cover crops while cash crops still are in the field, and examining the role of cover crops in various biointensive cultivation approaches. They also discussed selection process, planting schedules, and survival rates for vetch, rye, and clover.

Small farm entomologist David Muelheisen discussed his research on organic controls for the carrot rust fly. Muelheisen interplanted hairy vetch among carrots to distract the adult rust fly, which uses the vetch as a food source, leaving the carrots untouched. For this experiment, cover crops were planted when young carrots made their fifth leaf.

For more information on WSU small farms field trials, see [their web site](#).

Jobs

Policy Coordinator Position

Contact [Kathy Lawrence](#) or see the National Campaign for Sustainable Agriculture [web site](#).

Announcements

Peace Corps Needs Agriculture Volunteers!

The U.S. Peace Corps would like to encourage people with agricultural skills to apply to be volunteers. They have found a significant drop in applicants from traditional agricultural universities and programs.

Ever wanted to impart your agricultural knowledge to others or learn something new from agriculturalists around the world? Ever wanted to experience life in another country? The Peace Corps needs agriculture volunteers to serve in 70 countries worldwide.

Agriculture volunteers collaborate with local farmers on new endeavors in farm management, livestock care, the agricultural sciences, vegetable gardening, and nutrition education. Projects vary greatly and may include activities such as promoting green manures and composting, developing land use plans for pastoral farmers, and introducing techniques that prevent soil erosion and reduce the use of harmful pesticides.



Do you need formal education? While Peace Corps prefers a Bachelor's degree, people with agricultural experience can qualify without a degree. Specifically, people qualify for an agricultural program with three years of experience in farming, farm management, agribusiness, or working with livestock. Or, they qualify with one year of experience in vegetable gardening, landscaping, tree planting, or livestock care.

During 27 months, Peace Corps volunteers gain valuable new skills and cross-cultural experience. They receive a living allowance, medical and dental care, and other benefits. Adults of all ages and married couples are encouraged to apply. For more information, visit www.peacecorps.gov, or call 800-424-8580, Option 1.

(Editor's note: Two members of the editorial board served as Peace Corps volunteers in Africa.)

Biological Control and Organic Production Conference

The International House, UC-Berkeley Campus, July 13 - 15, 2004.

Congress Funds Organic Research at WSU

Congress significantly increased support for organic farming in Washington State with a \$225,000 appropriation in its FY 04 budget for organic research at Washington State University's Center for Sustaining Agriculture and Natural Resources (CSANR). Sen. Patty Murray (D-Wash) championed the appropriation with the support of other members of the

state's congressional delegation, along with support from Washington Sustainable Food & Farming Network (WSFFN), PCC Natural Markets, Washington Tilth Producers, the Washington State Department of Agriculture, the Washington Tree Fruit Research Commission, the Pacific Northwest Direct Seed Association, Small Planet Foods, Bejo Seeds, and Bio-Oregon, Inc.

Washington State's number of organic farms doubled from 1995 to 2003, with more than 33,000 acres certified organic or in transition to organic on 500 farms. The value of the state's organic food industry reached \$200 million in 2002. "Washington growers rely on WSU to provide research and information on the best production methods possible, as well as to help them access higher-value markets," said Bonnie Rice, Director WSFFN, a statewide advocacy group for sustainable agriculture and family farms. Research will benefit conventional as well as organic farmers since both groups need research to help transition to more environmentally sound pest control alternatives, especially given the recent federal court ruling in Seattle banning the use of 38 pesticides near salmon-bearing streams.

For more details, visit the WSFFN site http://www.wsffn.org/press/press_feb_05_04.html or contact Bonnie Rice (WSFFN) at 360-527-9426, Chris Feise, WSU CSANR at 206-725-0106, or Goldie Caughlan, PCC Natural Markets at 206-547-1222.

Food Alliance Partners with Burgerville - Northwest Fast-Food Restaurant First in Nation to Adopt Third Party Certification

Food Alliance press release, Portland, OR, February 23, 2004. "Food Alliance, one of the nation's leading certification organizations for environmentally friendly and socially responsible agricultural practices, has added a Northwest dining favorite to its member roster, Vancouver, Wash.-based Burgerville Restaurants. Burgerville is the first fast-food chain in the nation to join Food Alliance,

agreeing to adopt Food Alliance's third party certification standards to guide its selection of ingredient suppliers.

"Our commitment to sustaining Northwest food producers has long been reflected in our development and marketing of seasonal menu items that showcase high quality, locally grown ingredients," says Burgerville president Tom Mears. "Partnering with Food Alliance takes our commitment to high quality ingredients, sustainable agriculture and healthy food systems a step further. As a result, we believe many of our suppliers will follow our lead and take the steps necessary to become Food Alliance certified."



Burgerville's partnership adds 39 restaurant units to Food Alliance, bringing the number of participating restaurants to 61, and expands Food Alliance's visibility into an accessible dining market, where people eat out frequently and are equally concerned about the quality of ingredients.

"Joining Food Alliance demonstrates Burgerville's resounding dedication to serving the best ingredients available," says Food Alliance executive director Scott Exo. "Burgerville is one of the Northwest's most beloved restaurant brands. Our partnership with this restaurant company expands our ability to recruit and certify new food producers who are interested in a relationship with Burgerville."

The first Food Alliance certified supplier to be adopted by Burgerville is Oregon Country Beef. Oregon Country Beef is a 40-ranch co-op of beef producers raising healthy beef in harmony and balance with nature, which includes: vegetarian diets of grass and grain, open range grazing, and raising cattle from birth without hormones or antibiotics. Burgerville is now using Oregon Country Beef in all of its burgers making it the first fast-food restaurant in the Pacific Northwest to serve natural beef burgers. "

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California's State Organic Program was approved by USDA

California received official notice on February 6th that its application to serve as a State Organic Program was approved by USDA. The State can now provide support and enforcement services to both the organic consumers of the State and to the more than 3000 registered organic producers.

Grants

Community Food Projects Program

The USDA recently announced the availability of \$4.6 million in grants for 2004. Funding is available for projects designed to: 1) meet the food needs of low-income people; 2) increase the self-reliance of communities in providing for their own food needs; 3) promote comprehensive responses to local food, farm, and nutrition issues; 4) meet specific state, local, or neighborhood food and agriculture needs for infrastructure improvement and development; 5) plan for long-term solutions; or 6) create innovative marketing activities that mutually benefit agricultural producers and low-income consumers.

For details see: "[Community Food Projects Competitive Grants Program Fiscal Year 2004: Request for Applications](#)"

Resources - Agriculture

[Grass-fed Beef Production](#)

[Food With a Farmers Face on It](#)

Kellog Foundation briefing paper.

[Developing Local Food & Agriculture Systems - International Symposium Proceedings](#)

Proceedings of a Symposium held in France in October, 2002.

[Online Soil Survey Manuscripts](#)

[Urban Farmers in Detroit](#)

[Energy Efficient Grass-Based Meat & Veal Production and Marketing Manual](#)

Center for Agricultural Development and Entrepreneurship in Oneonta, NY.

[OrganicAgInfo](#)

Online database of research, farmer-to-farmer information and more.



[Rose Gardens Make Fruit Orchards More Inviting to Friendly Wasps](#)

ARS and WSU study on bolstering parasitic wasps to combat leafroller moths.

[Organic Apple Production in Washington State: An Input-Output Analysis](#)

by [Pon Nya Mon](#) & David W. Holland

Abstract. "Organic food consumption in the U.S. has been steadily increasing in recent years. The objective of this paper is to provide an Input-Output (IO) based economic impact analysis for organic apple production in Washington State....The organic apple sector was more labor intensive than the conventional sector and total impact increased employment in all scenarios was higher for the organic apples than for the conventional apples. The organic apple sector used less intermediate inputs per unit of output than conventional production. As a result, the indirect economic effect was lower for the organic sector than the conventional sector. Moreover, the total (direct, indirect, and induced) economic impact as measured by sales was lower for organic production under a one million dollars increase in final demand. However, the two production methods are not directly comparable in this scenario because of the higher prices associated with organic apples. The second scenario (per unit of land) showed greater total economic impact measured as sales or employment was higher for

Continued on next page

organic apples compared to conventional apple production."

See the full report at [Organic Apple Production in Washington State: an Input-Output Analysis](#).

[Collective Action and Property Rights for Sustainable Development](#)

Edited by Ruth S. Meinen-Dick and Monica Di Gregorio

This is a collection of policy briefs available from the International Food Policy Research Institute.

[Selling Directly to Restaurants & Retailers](#)

University of California Sustainable Agriculture Research & Extension Program.

[Organizing a Successful Agricultural Direct Marketing Workshop](#)

Published by the University of California Sustainable Agriculture Research & Extension Program.

[Tilth Producers 2004 Placement Service Listings](#)

Tilth Producers publishes the annual Tilth Apprentice Placement Service Listing as a way for folks seeking work experience on organic and sustainable farms to connect with farmers seeking apprentices. The 2004 listing describes apprentice position openings for 74 farms. Actual apprenticeship arrangements are made directly between the participating farms and apprentices.

[Why Worry About the Agriculture of the Middle?](#)

by Fred Kirschenmann, Steve Stevenson, et .al.

Fred Kirschenmann, Director of the Leopold Center for Sustainable Agriculture www.ag.iastate.edu/centers/leopold, is currently working with colleagues to develop a national renewal strategy. One of their starting points has been creation of an "Agriculture of the Middle" website and publication of a 17-page white paper on issues confronting mid-sized farms.

[Proceedings from CSANR Organic Workshops](#)

The proceedings includes poster papers but does not include oral presentations.

[Virtual Toolkit for State and Local Food Policy Councils](#)

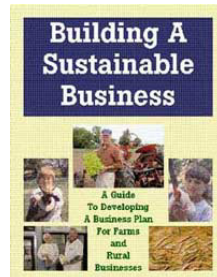
The Drake University Agricultural Law Center's Toolkit for State and Local Food Policy Councils is now online. The site provides information about state and local Food Policy Councils, power point presentations from various state and local food policy councils, policy publications, and more.

[Enology Statistical Information](#)

An article by Suzi Teghtmeyer on page three of the [Vineyard and Vintage View](#) shows where to find statistical information for acreage, production, consumption, prices, etc. The article pertains to grapes and wines, of course, but the databases/sites can be used to find other crop and beverage information.

[Building a Sustainable Business: A Guide to Developing a Business Plan for Farms and Rural Businesses](#)

This publication brings the business planning process alive to help today's alternative and sustainable agriculture entrepreneurs transform farm-grown inspiration into profitable enterprises. Sample worksheets illustrate how real farm families set goals, determined potential markets and evaluated financing options, and help the reader develop a detailed business plan. To order, send \$14 plus \$3.95 s/h to Sustainable Agriculture Publications, 210 Hills Building, University of Vermont, Burlington, VT 05405-0082. Credit card and discounted volume orders may be placed by calling 802-656-0484. Preview it online at: <http://www.sare.org/publications>. (280 pp, Wire-bound)



[OTA Organic Beef production](#)

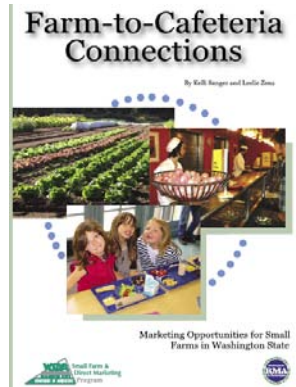
In response to the discovery of Mad Cow disease in the United States, OTA reassured consumers that certified organic beef is fully traceable, has passed rigorous inspections, and has never been fed any animal by-products in any form.

[Grass Fed Beef Information](#)

Grassfed Educational Website, sponsored in part by the California Food & Fiber Future Grant and the CSU, Chico Agricultural Research Initiative.

[WSDA Farm to Cafeteria Guide](#)

Washington State Department of Agriculture releases an 87-page handbook, Farm-to-Cafeteria Connections: Marketing Opportunities for Small Farms in Washington State to help farmers, food service professionals, and communities bring locally grown foods into schools, nursing homes, hospitals and other institutions. The guide explains how to start a farm-to-cafeteria program and includes numerous resources and case studies of successful projects.



[The Organic Farmers Guide to Oregon State University](#)

This guide is a listing of services and information available through OSU for farmers using organic or biointensive methods. The guide is divided into analytical labs and other services, publications, and faculty interested in organic and sustainable agriculture.

[The Alternative Farming Systems Information Center \(AFSIC\)](#)

This site collects, organizes, and distributes information on sustainable and alternative agriculture.



Washington Agricultural Statistics

The Washington Agricultural Statistics 2003 (covers 2000 thru 2002 crop years) is now available on line at . Click on "2003 Edition of Annual Bulletin."

Resources Forestry

Access, Labor, and Wild Floral Greens Management in Western Washington's Forests

Kathryn A. Lynch & Rebecca J. McLain

"This report compares the changes that took place between 1994 and 2002 in the nontimber forest product (NTFP) management regime that governed access to floral greens and other NTFPs in western coastal Washington. A rapid rural appraisal approach was used to gather data from 24 NTFP stakeholders during phase I (1994) and from 37 NTFP stakeholders during phase II (2002). Phase I findings summarized the rules of access to NTFPs on private, state, tribal, and federal lands in 1994, as well as comparing the perspectives of land managers to those of pickers and buyers regarding the need for and the impacts of those rules. A preliminary diagram of NTFP knowledge exchange networks was developed from information provided by informants who participated in the 1994 study. This diagram suggested



that in 1994, buyers and land managers functioned as key information exchange nodes in NTFP networks at the study site."

Washington DNR Forest Health Update Available!

This [Forest Health Homepage](#) contains brief summaries about the current status of forest health issues such as major insects and diseases, fire, drought, exotic pests, and general facts about the status and trends of Washington's forests.

OSU Graduate Certificate in Sustainable Natural Resources

Oregon State University developed a new [Graduate Certificate Program](#) in Sustainable Natural Resources. This program is designed to provide multidisciplinary knowledge and skills to solve complex problems in the biology, economics and social aspects of natural resource management. A new course taught by Dr. Badege Bishaw, "Planning Agroforestry Projects," will be part of the SNR Certificate curriculum.

OSU Extension in Clackamas County Forestry Calendar

Family Forest Fish Passage Program

The Small Forest Landowner Office accepts applications for a financial assistance program aimed at helping family forest landowners improve fish-passage across their forestlands. The program will pay for 75% - 100% of the cost of fixing a fish passage barrier such as a culvert, weir, dam, spillway, bridge or other road crossing that prevents the free migration of fish to habitat upstream.

Once a landowner submits an application to the Program, a field technician conducts a site visit to confirm that the in-stream structure is a blockage. If it is determined that a structure is not a blockage, the landowner will not be enrolled in the program and will not be obligated to fix the structure. If it is determined that the structure is a blockage, the project will

be placed on a prioritized list and will be funded when it becomes a high priority in the watershed. A structure will be prioritized based on the amount of habitat made available, the cost of the project, whether there are other blockages downstream and other relevant factors.

If a fish-blocking culvert was originally installed under a state permit (e.g. an HPA), the state will provide 100% of the repair costs. If a fish-blocking culvert was not originally installed under a permit, the landowner is responsible for providing approximately 25% of the repair costs. The 25% match can be in the form of cash or in-kind services (equipment, time, materials, etc.).

For more information on the Program or to receive the guidelines or an application, please also contact [Kirk Hanson](#) at 360-902-1391.

Non-Timber Products Database

This database has over 1343 species records, 2911 bibliographic references, and 184 links to related sites. Hosted on the [Institute for Culture and Ecology](#) website.



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

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