

Chapter 5—Cones and Seeds

Description of the Product and Its Uses

Decorative cones. A wide variety of cones are used in floral, wreath, and potpourri products. They are used in gift and fragrance items, as ornaments and table decorations, and in a variety of small niche markets such as jewelry, bird feeders, etc. Cones can be waxed and used as fire starters and decorations or crushed and molded into Presto-log shapes for fire starters. Cones from redwood, Douglas-fir, hemlock, ponderosa pine, sugar pine, longleaf pine, loblolly pine, slash pine, white pine, red pine, jack pine, Jeffrey pine, and black and white spruce, among others, are all marketable. Each market readily substitutes new varieties for cones that are in short supply.

Many manufacturers of cone products, especially potpourri manufacturers, obtain their cones from seed cleaning plants after the seed has been removed. However, certain soft cones (for example, Norway spruce) are too fragile to go through the seed extraction process, while other cones are so large (for instance, sugar pine) that they can only be obtained from local wildcrafters. In the floral market, large cones are generally more marketable. In the potpourri market, small, midsized, and large cones may all be used. Hemlock is considered a premium cone for the potpourri market because it is light and has a good shape. Small pine cones are generally more valued for making wreaths. The scales from fir cones, particularly noble fir, are also salable products and used in the potpourri industry.

Seed cones. The major users of seed cones tend to be Federal government agencies such as the Forest Service and the Bureau of Land Management; large private landowners such as Weyerhaeuser, Boise Cascade, and Louisiana Pacific; independent seed companies; and State seed tree nurseries. While some of the seed cleaning plants associated with various large and small forest seed companies, paper companies, and State seed tree nurseries harvest their own green pine cones for seed, others buy the cones and thus represent good markets for cones.

For Federal agencies, the amount of seed cones purchased is closely related to timber harvest levels, general forest health, and special reforestation projects. In the case of the Forest Service, seed cones are usually purchased a few years in advance of major planned timber sales so that the seeds can be extracted and planted in nurseries a couple of years before the timber is cut. In this way,

young trees are ready to be planted in an area immediately after harvest.

Originally, seed cones were purchased in bulk with no way to identify where they came from. But trees with a genetic makeup that allows them to grow well at one elevation and range will likely do more poorly in a different elevation and range. Today most seed buyers realize that seeds need to be planted at the same elevation in which they were grown. Federal agencies such as the Forest Service and most seed cone buyers only buy certified seed, and the certification documents the tree species, the seed zone in which the trees were growing, the watershed, and the elevation. Certification is done on-site by an independent certification agency.

The Forest Service may also request collection from specific numbered, tagged, and mapped trees if the seed is to be used for tree improvement stock. Eventually, the Forest Service plans to get all its tree improvement stock seed from seed orchards in a certain elevational range. Some large timber companies are already at the stage of collecting from their own seed orchards.

Minimum and standard rates for collecting permits for seed cones and dry cones are published for each Forest Service region. Each national forest within a region has some flexibility to set permit charges higher than the minimum rates. For example, in Region 6 (the Pacific Northwest), the Rogue River National Forest set 1991 rates as follows: seed cones—10 cents per bushel; dry cones (except sugar cones)—20 cents per bushel; sugar pine cones—5 cents each. (Dry cone permits are more expensive than seed cone permits because the decorative cone market represents a higher value market.)

On the other side of the country, the State of New York's Department of Environmental Conservation in 1991 purchased white pine cones for \$7 a bushel, red pine cones at \$18 a bushel, larch cones at \$22 a bushel, and balsam fir cones at \$24 a bushel. The department may purchase up to 500 bushels of a particular cone in a good year. Other years the department is able to collect all that it needs without an outside contract. The cones are purchased on the open market, and in the Northeast most cone gathering is done on private land. After extracting the seeds, the State sells its cones at a price of about \$10 per 2 bushels, often to craft stores. The craft stores may, in turn, resell them at 10 to 15 cents apiece. New York typically sells 200 to 300 bushels a year. Damaged cones are ground up and sold as mulch for landscaping. Red pine and Norway spruce are two cones that seem to be in good demand in the Northeast.

Some Forest Service districts issue fairly large contracts with companies or private individuals to collect seed cones. The best avenue for small entrepreneurs interested in seed cone harvesting, at least in the Pacific Northwest, generally is to work for one of the larger seed companies or seed brokers. The large timber companies generally harvest their own seed cones.

Market and Competition Considerations

The cones must be carefully labeled. Seed cones in particular need to be collected before they have stayed on the ground very long or become broken or discolored. They cannot be harvested in the winter, of course. The Forest Service will pay top dollar for seed cones, and after the seeds are extracted, the spent cones can often be repurchased by an individual for resale to other markets.

Decorative cones. Prices paid for decorative pine cones vary year to year, from place to place, and by cone variety. Prices for cones vary markedly but typically range from 37 to 52 cents per pound for semidried cones. But while the decorative cone market is not very stable, it has generally seen a fairly steep upward curve the past 2 years. One cone broker reported that he had sold 1.5 million cones in 1991 to 400 different buyers, with about 6 primary buyers who, in turn, marketed to several hundred accounts each. This was twice the volume this broker had sold in 1990; still he did not feel the market had peaked yet. In fact, he expected an increase of another 100 percent in the market in 1992.

There are four primary places in the United States for decorative cone sales—Tennessee, Minnesota, the East Coast, and California. The market for large cones seems to be becoming stronger, while the market for small cones is dropping off. Currently, the lodgepole pine cone is one of the largest selling cones worldwide because of its availability. In the South, the longleaf pine cone is the cone in greatest demand because of its size.

Outside the United States, the European market is becoming particularly attractive. For cones and most botanical products, successful entrepreneurs have noted that, as a rule of thumb, whatever amount the United States uses, Germany can be expected to use about 10 times that amount. However, increased competition in cones from Guatemalan and other Central and South American dealers is also anticipated.

A list of dealers in botanical products, including cone buyers, has been prepared by Miller (1988). These buyers generally purchase cones for resale to the floral and craft and potpourri markets, and they generally provide Wildcrafter Price Sheets upon request. These sheets include buying price and annual needs in terms of volume and form. The wildcrafter should be prepared to

submit representative samples of the cones to be collected and a statement of the approximate quantity that can be gathered. Purchase orders should be obtained for quantities over 1,000 pounds.

It is generally better for the wildcrafter of any special forest product to sell to brokers or wholesalers rather than to try to deal directly with large manufacturers. These individuals perform an important function in keeping the supply smoothed out and the market steady, which ultimately benefits the wildcrafter. A wholesaler or broker can also meet the large quantities needed, and deal with the host of other problems that can come up when dealing with large companies.

For example, a medium-sized company buying cones for holiday gift packs may purchase 30 trailer loads of cones a year, or about 72,000 bushels, at between \$0.50 and \$1.50 per bushel. A broker is needed because it would be impossible for most small entrepreneurs to develop a supply this large. Furthermore, the broker performs an important service in coordinating the conflicting demands that a large manufacturing company can place on a supplier. For example, there are about eight large companies (each having over 200 employees) that manufacture potpourri products in the United States and that purchase large volumes of cones. Each of these companies may have a purchasing agent, a warehouse manager, a scheduling person, and an individual line manager, all of whom have different agendas and demands to be met. The small cone supplier trying to deal directly with all the parties in a large company would soon find the coordination and management problems simply too burdensome. In contrast, brokers, wholesalers, or “middlemen” specialize in dealing with such problems.

It should be noted that while some wholesalers will buy any size cone shipment, others only buy in fairly large quantities themselves. Cones are often purchased by the case or, more frequently, by the trailer load (about 2,400 bushels), at bulk prices, sometimes for only a few cents per cone. Quantities purchased are typically from 2,000 to 20,000 pounds. For this reason, dealing with a cone broker or forming a local cooperative may be the best approach to entering the cone market, since several harvesters may need to work together to fill a purchase order. For example, it may be feasible to gather 200 to 400 pounds of cones at a particular location, but a wholesale buyer may be only interested in buying quantities of 2,000 pounds or more. Again, a broker can be used to build a larger shipment.

As cone markets expand, some form of trade association or network will likely be needed to help keep the market stable and prices high enough to provide fair wages for wildcrafters. For such products to help supplement rural incomes, a coordination mechanism is needed in order that the labor costs rather than the buyer's price will

dictate the cone costs. It takes five people 5 days to pick a trailer load of large pine cones with each individual gathering about 100 bushels a day, and they might each earn \$200 a day in a good location. A wildcrafter has to make a minimum of \$75 a day to stay with the work. Good wildcrafters can average about \$120 a day.

Below is a list of cone prices in the Pacific Northwest in fall 1991 (table 5–1). Prices paid harvesters were about 15 percent less. The prices assume delivery in Oregon and Canada for the most part.

In Wisconsin in the fall of 1991, wildcrafters were earning the following prices for cones: white spruce cones, \$2.50/bushel; red pine cones, \$1.75/bushel; Norway spruce cones, \$1.50/bushel; black spruce cones, \$0.50/bushel; and tamarack cones, \$1/pound. Cone buyers in the Southeast typically paid between \$0.50 and \$1.50 per bushel in 1991 for a trailer load of cones (2,400 bushels). The State of Minnesota sells usually \$8,000 to \$10,000 worth of cones per year at about \$2 per bushel.

Seed cones. The markets in seed cones have been declining in the past few years. Reforestation of native forests and export markets have traditionally been the two major uses of the seed, and with the establishment of seed orchards by Federal agencies, domestic timber companies, and even in foreign countries, the demand for wild collected seed has dropped considerably. One large seed company on the West Coast has reported that 1991 was the first year that the market limited the amount of seed collected. In previous years, it was the amount of seed available that was always the limiting factor. There was a time when this company collected between 300,000 and 400,000 bushels of seed cones a year, but today this figure is significantly smaller.

Crops are very cyclical and very seasonal. The cones must be harvested during a very narrow window of time,

generally starting in mid to late August and continuing through September. (About the time hunting season starts, cone collectors get out of the woods.) There is a small increase in interest in forest species that are not traditionally commercial timber species, such as vine maple and alder, because these species are now being included in more reforestation plans, but their volume is not significant.

Even though demand is declining, however, there is always going to be some interest in the product, and for people who live in rural communities near forest resources, there will probably always be some opportunity to gather and sell seed cones.

Seed companies generally have designated agents or producers in many rural communities in the forest regions, and these individuals, in turn, solicit help from the general public (for example, through newspaper notices or posted signs) when the time comes to collect seed cones. The producer receives payments, quality standards, and materials from the company, and this individual, in turn, may have 10 to 100 people collecting cones under his or her authorization on behalf of the company. The producer checks the cones against the quality standards and weighs the cones at a designated buying station, then pays for the cones on the spot. The cones accumulate at the buying station, and the company sends out trucks to pick up the cones and bring them to the company headquarters. The producers are paid a commission for the seed cones at that time. A large seed company may have several producers in a region.

There are large variations from year to year in the prices seed companies can pay for seed cones. In 1991, one seed company in the Northwest was paying \$10 per bushel for ponderosa pine seed cones and \$20 per bushel for Douglas-fir seed cones.

Table 5–1. Cone prices in the Pacific Northwest in fall 1991

Cone	Price per pound (unless otherwise noted)	Cone	Price per pound (unless otherwise noted)
Alder	\$1.80	Knobcone pine	\$0.12 each
Hemlock	1.50	Lodgepole pine	\$0.40
Larch	\$1.80	Longleaf pine	\$0.15 to \$0.25
Giant Sequoia	\$0.60	Ponderosa pine	\$0.30 to \$0.45
Incense cedar	\$1.80	Sugar pine	\$0.45 to \$0.60
Western redcedar	\$1.50	White pine	\$0.70
Douglas-fir	\$0.25 to \$0.35	Black spruce	\$0.70
Digger pine	\$0.45 each	Norway spruce	\$0.10 each
Jeffrey pine	\$0.18 each	Sitka spruce	\$0.65
KMX pine	\$0.45	White spruce	\$0.40 to \$0.65



Cones from evergreen trees provide a ready and abundant source for floral, wreath, and potpourri products. Photo courtesy of Jill Bauermeister, USDA Forest Service. (90CS2438)

A good seed cone picker can make \$100 a day or even as much as \$200 a day. Most of the volume of cones collected tends to come from a relatively small group of pickers. One company estimated that in a given year up to 2,000 individuals might try collecting cones for them, but only a few hundred actually make any significant money from seed cones. The most successful tend to be individuals who are closely tied to the secondary forest products market, wildcrafters who also collect other forest products at other times during the year. In a few cases, rural families looking for supplemental income opportunities in the fall pick each year.

Seed cone collectors must have no difficulty climbing the trees and shaking the branches to release the green cones. The green cones are picked up in bags and buckets. Seed counts, which vary by species, must also be made. After collecting seed cones, the cones are sent to extraction plants where the cones are heated sufficiently to cause them to open. The cones are then thrashed to get the seed out, and the spent cones are often sold to the decorative market.

Distribution and Packaging

Burlap, polypropylene sacks, and boxes are the normal packaging materials for cones. Boxes are generally used on large or premium (fragile) cones that might get damaged in freight.

Small quantities of cones, as little as one case, can be sent UPS to retailers as “floral packs.” For example, a case of ponderosa pine cones (200 per case) is sold by Northwest Botanicals for \$10, and a case of about 40 large (10- to 14-inch) sugar pine cones is available for \$22.

Equipment Needs, Costs, and Suppliers

Most of the cone harvesting that is done in the forest is done by hand. Cones can be gathered directly from under some trees, primarily pine and spruce trees. Cones usually must be gathered soon after falling or they will turn black. If the previous year’s fall is collected, it will have to be well cleaned before being sold. Small cones are often raked from branches, or ground cloths can be laid and the trees shaken or the branches beaten. Occasionally, seed collectors need spurs and a safety belt in order to climb the tree. A portable vacuum backpack can also be used and the product sifted later to separate the cones from other debris.

Investing in equipment for a small seed cleaning operation could be a profitable alternative enterprise for some entrepreneurs. A small seed cleaning operation can be set up for around \$50,000.

Wildcrafters need to obtain brush permits or permission from landowners before beginning a cone harvest. The U.S. Bureau of Land Management (BLM), State departments of natural resources, the USDA Forest Service (USDA FS), and most railroad companies will issue brush permits for gathering. These permits range in cost from free to a couple of cents per pound (based on wet weight harvest).

Resource Conservation Considerations

No special concerns related to cone harvesting have been identified by forest managers. However, a standardized permit system is needed. Stewardship agreements on tracts would be another alternative.

Some State laws regulate the movement of seed between States. Prospective shippers or importers of seed should check with their county extension agent or nearest State or Federal seed laboratory concerning applicable restrictions.

Special Factors

The market for seed cones is not very large. Picking seed cones on government land often requires proof of insurance as well as a contract in hand.

In certain cone species, crops can vary greatly, with several years of excellent production followed by several years of poor production. There are often large seasonal variations in the availability of certain cones, and each genus and species has different cycles. There are regional differences as well. Drought often reduces the harvest significantly.

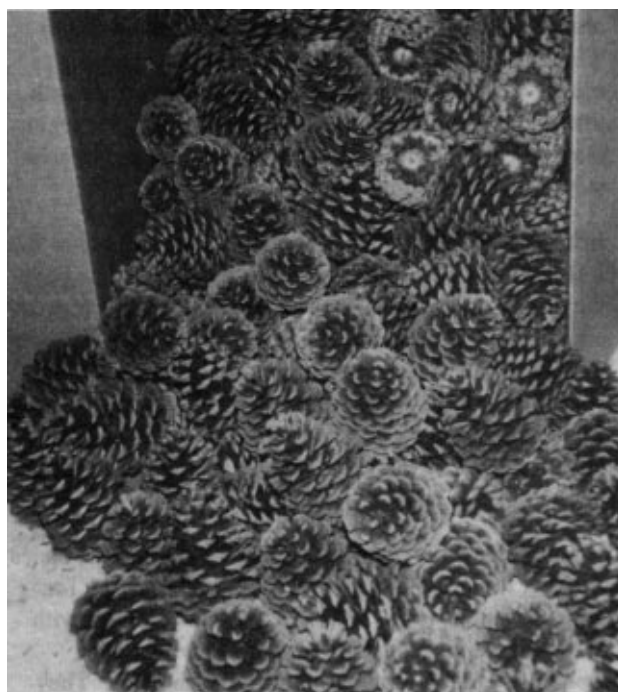
There are no national, uniform guidelines for these brush permits that the harvesters require when collecting cones from national forests. Such guidelines, particularly in national forests, are needed to help stabilize the cone market. Prices need to be arrived at carefully. Setting the price too high encourages some less ethical wildcrafters to simply steal cones or otherwise get around the requirements for a permit. Private seed cone buyers are quick to point out that while most of the time the Forest Service is sympathetic to the need to keep permit fees quite reasonable, in a few cases the permit fees charged for seed cones from a given national forest are considered to be much too high.

Profile

In 1984, Neil Dahlke of Bandon, Oregon, became disabled after getting caught in a fire line during a slash burn operation that left him with tissue damage to his lungs and a breathing difficulty requiring frequent, very expensive medication. As a former prospector, farmer, hunter, and professional fisherman, he had experience in self-employment and was quite familiar with the diversity of the forests. After careful research, he started harvesting cascara bark and then soon added decorative cones and mushrooms. Today he wildcrafts not only cones but herbs, bark, moss, mushrooms, and other edibles such as fresh watercress and dried juniper berries as well. His most recent new product is the preparation of alcohol suspension products from forest botanicals for a pharmaceutical company.

A special forest products entrepreneur needs to plan his or her harvests around the seasons. In May and June, Dahlke collects early morel mushrooms. As soon as the cones are dry, he collects sugar pine cones and ponderosa pine cones. In the fall, he collects matsutake mushrooms. The cones are marketed through a broker. The other products are marketed through large metropolitan buyers.

While his mushroom business is the largest part of his enterprise (he regularly markets hundreds of kilos of dried morels), the cone business has been one of the fastest growing. In 1990, Dahlke was able to ship nine 48-foot semitruckloads of cones, primarily ponderosa.



Ponderosa pine cones harvested by West Coast Botanicals, Inc. Photo courtesy of West Coast Botanicals, Inc., Bandon, OR. (SFP-16)



At West Coast Botanicals, pine cones are packed in polypropylene bags, and the bags are sewn shut and weighed on site. Background: 10,000 pounds of bagged ponderosa pine cones; foreground, sugar pine cones. Photo courtesy of West Coast Botanicals, Inc. (SFP-20)

He expects to be able to market 12 to 15 truckloads of cones in the future.

When he first started collecting cones, much of the harvesting occurred on Forest Service land. However, because the permit system is not uniform across the national forests, there is a tremendous diversity in

charges for the picking permits. When the forests to which he had been going for cones began charging as much as 20 cents each for cones that were only worth that much to the wildcrafter (whereas in another region they may have been only charging a nickel a cone), he stopped harvesting in the public forests.

Instead, Dahlke now has a contract to harvest cones from a 103,000-acre tract of timber company land. He pays the timber company 10 percent of whatever the harvesters are paid. For example, in 1991 he averaged between 9,000 and 10,500 pounds per load of ponderosa pine cones. The value to the wildcrafter was about 25 cents per pound, or \$2,250 to \$2,625 per load, and the price received by the landowner was 10 percent of that, or \$225 to \$262 per load.

Most wildcrafters can pick at least 300 pounds of cones per day, for a daily earning of \$75; they can pick for about 5 months long. Dahlke has cone contracts with between two and four different crews with 5 to 7 people per crew working during the summer. They may be college students or retired individuals, and very little training is required.

Dahlke is very conscientious about the quality of cones collected. They are packed in polypropylene bags, sewed, and weighed on-site, and the weight is written on the bag. He also makes sure that insofar as possible the people who do the harvesting are local, many of whom desperately need the work because of the reduction in the timber industry. He feels very strongly about promoting rural development within the communities of his region.

Considerations for a Rural Development Strategy

Cones are just one of many harvestable products that can be gathered from a forest. A strategy which sought solely to sell cones would not be sufficient for starting a small rural business. The large volumes of cones required to sell to large cone buyers make it difficult for most small entrepreneurs to compete. However, cones could be one of several forest products that are harvested, and collecting and adding value to cones through the manufacture of cone products could be a part of the community's strategy. A small business fashioning cones into a number of products, e.g., wreaths, painted cones for table decorations, or waxed cones, would be a possibility. (Craft shops and florists may pay twice as much for painted cones, for example.) Even then, though, cones would represent only a small fraction of the total number of products that would need to be developed.

Another part of the strategy that would be important would be to follow the trend in marketing directly to the

retail stores. Large chains like Safeway (there are over 4,000 Safeway stores), Ben Franklin, or K-Mart are selling more and more craft items in their floral sections. Drop shipments to such stores would be an important way to maximize value received by such a rural business.

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Sample Sources

Whole Herb Company, P.O. Box 1085, 250 East Blithedale Avenue, Mill Valley, CA 94942. 415-383-6485.

Winter Woods, 701 Winter Woods Drive, Glidden, WI 54527. 715-264-4892.

Roy Herbst, Herbst Seed, 307 No. 9 Road, Fletcher, NC 28732. 704-628-4709.

Carolyn Stone, Carolina Cone Crafts, 203 Main Street, Central, SC 29630. 803-639-9470.

Greenleaf Inc., 200 Winding Way, Spartanburg, NC 29301.

Resources

West Coast Botanicals, Inc., Route 1, Box 861, Bandon, OR 97411.

Northwest Botanicals, Inc., 1305 Vista Drive, Grants Pass, OR 97527. 503-476-5588.

New York State Department of Environmental Conservation, Saratoga Tree Nursery, 431 Route 50 South, Saratoga Springs, NY 12866. 518-885-5308.

Herbal Green Pages, The Herbal Connection, 3343-0 Nolt Road, Lancaster, PA 17601-1507. 717-898-3017.

Mountain Farms, Inc., 125 Candlewood Isle, P.O. Box 108, New Fairfield, CT 06812. 203-746-1842. Pine cones and pods for craft supplies.

Sierra Pinecone Company, P.O. Box 250, Avery, CA 95224. 209-795-1163. Supplies and accessories for making holiday and other decorations using pine cones.

Publications for the Professional Craftsperson

Potpourri from Herbal Acres, Box 428, Washington Crossing, PA 18977. Editor: Phyllis Shaudys. This is one of the oldest quarterly herb newsletters in print. It is primarily devoted to herb crafting topics: fragrant, culinary, and decorative. Strong networking focus. Excellent resource for the crafter and retailer. \$18/year.

Potpourri Party Line, 7336 Berry Hill, Palos Verdes Peninsula, CA 90274. Editor: Dody Lyness. This fine quarterly is primarily for floral and fragrance artists and designers. Excellent resource for herb artists and crafters. \$12.50/year.

