

# Productive Conservation:

## Growing Specialty Forest Products in Agroforestry Plantings



### Discovering profits in unlikely places

Whether you own a small acreage just outside of town, or a 5,000-acre farm, you may be able to earn supplemental income, save money, and improve and protect your environment by producing commercially valuable specialty products from tree and shrub plantings. There are many opportunities for producing, selling, or personally enjoying specialty forest products in rural, suburban or even in urban settings. For example, is your country home, farmstead, livestock area, or acreage battered by the wind or buried by winter snows? Tired of mowing acres of lawn on your acreage every weekend? Do you have fencelines, woodlots, marginally-productive upland fields, streamside areas, pivot irrigation corners, or just hard-to-farm small parcels? Any of these areas could be better utilized by planting woody crops in windbreaks, living snow fences, or streamside buffers that produce *specialty forest products (SFPs)*.

Unsheltered acreage or farmstead    Well-protected acreage or farmstead



Eroding streambank

Productive stable streambank

### What are specialty forest products?

Specialty forest products generally fall into one of four categories; 1) medicinals and botanicals, 2) forest-based food products, 3) woody decorative florals, and 4) handcraft products and specialty woods.

#### 1. Medicinals and Botanicals

Medicinals and botanicals are plant-derived substances that are used in a variety of food supplements, herbal health items, cosmetics or other products. Products are made from nearly all parts of trees, shrubs or herbaceous plants, including wood (cedar), bark (smooth sumac, slippery elm), buds (cottonwood), leaves (catnip, ginseng, ginkgo), roots (sassafras, ginseng, goldenseal), fruit and flowers (echinacea, partridgeberry, skullcap, St. John's Wort, elderberry), nuts (black walnut, pecan), sap (maples), and even pollen (ash, oak, cottonwood, maples, pines and many others).



Ginseng

#### 2. Woody-Based Food Products

Tree and shrub-based food products include nuts, fruits and some mushrooms. Nuts include black walnut, Chinese chestnut, pecan (and northern pecan), hickory, butternut, hybrid hazelnut and ginkgo. Superior nut cultivars exist for all of these species. Commercial nut markets include in-shell products, whole and crushed kernels, oils and confections. High prices for fresh kernels are often paid by high-end restaurants, bakeries, etc.

Commonly harvested fruits include chokecherry, highbush cranberry, sand cherry, currants, Corneliancherry dogwood, elderberry, saskatoon (serviceberry or juneberry), jostaberry, Nanking cherry, chokeberry, buffaloberry, pawpaw, and persimmon, among many others. All are harvested for home consumption, but many are also gathered for commercial use as fresh fruit, jams, jellies, syrups, juices, concentrates, confections and wines. Berries usually sell for \$0.65 to \$1.50 or more per pound.

High value gourmet mushrooms (e.g., Shiitake and oyster) can be intentionally cultivated on logs or wood chips in a forest setting. These are marketed in supermarkets and ethnic or high-end restaurants.



Food products



# Productive Conservation with S

## 3. Woody Decorative Florals

Any woody plant species that has a colorful or unusually shaped stem, bud, flower, fruit or even leaf can become a decorative floral product. Examples include cultivars of red and yellow-stemmed dogwoods; curly, pussy, flame and basket willows; red (sweet) birch; holly and bittersweet vines (for fall fruit); flowering branches of forsythia, apple, cherry, plum, witchhazel; and many others. Floral designers increasingly use these materials fresh and dried in creative floral arrangements.

Good opportunities exist for garnering substantial returns by producing and marketing decorative woody stems. Retail florists generally pay around \$0.50-\$0.80 per 4'-5' stem for curly or pussy willow. Decorative florals can be sold directly to retail floral shops, large retailers and wholesalers throughout the US. For example, nearly 200,000 woody stems are sold each year in Nebraska alone (Lambe, D. 2000).

Woody stems are sold fresh or dried, depending on the end use. Flowering stem material is generally cut dormant, and is forced to flower by either the grower or florist. Some plant materials with showy leaves are preserved by soaking in glycerin and enhanced with various dyes, increasing their value. "Floral greens" are cuttings from coniferous trees (firs, spruces and pines) for use in wreaths and seasonal decorations. Produced in native northern forests, they are a multimillion dollar industry in a number of northern states.



Willows creatively used in a floral arrangement

## Specialty Forest Products With Commercial Markets

Species	Scientific Name	Cultivars for SFP Production	Products/Characteristics
<b>NUTS</b>			
Butternut Chestnut, Chinese Ginkgo Hazelnut, Hybrid	Juglans cinerea Castanea mollissima Ginkgo biloba Corylus hybrid	"Kenworthy", "Mitchell" Many "Salem Dandy", "Salem Lady", "Mother Load" "Farris 88-BS", "G-17", "G-14", "Gellatly # 502", "Grimo 188P", "Skinner", "Grand Traverse" "Winkler", "Rutter/Badgersett Hybrids"	fresh nuts fresh nuts canned nuts, medicinal fresh nuts, oils, syrups, nutmeat, confections
Pecan, Northern Walnut, Black	Carya illinoensis Juglans nigra	many many	fresh nuts, nutmeat, confections fresh nuts, oil, nutmeat, nutshells
<b>FRUIT</b>			
Apricot Buffaloberry Cherry, Nanking Cherry, Sand or Bush Cherry, Black Chokeberry Chokecherry	Prunus armeniaca Shepherdia argentea Prunus tomentosa Prunus besseyi Prunus serotina Aronia melanocarpa Prunus virginiana	"Moongold", "Sungold", others None "White", standard red variety "Hansen", "Sioux" None "Nero", "Viking" "Boughens Chokeless", "Robert", "Pickup's Pride", "Goertz", "Garrington" "Schubert" or "Canada Red" "Wentworth", "Hahs" "Crandall", "Deseret",	fresh and dried fruit, jam fresh fruit, jelly, wine fresh fruit, jelly fresh fruit, jelly fresh fruit, jelly, wine, juice jelly, juice, persistent winter fruit fresh fruit, jelly, wine, syrup, juice
Cranberrybush, American (Highbush) Currant, American Clove	Viburnum trilobum Ribes odoratum	"Consort", "Blacksmith", "Brodtop" "Ben Sarak", "Laxton's Giant", others Many Many "Elegant", "Redstar", "Yellow", "Redstone" "York" "Adams" "Pixwell", "Welcome", "Clark" "Jostagrande", "Jostina", "Red Josta"	fresh fruit, jelly, wine, syrup, juice fresh fruit, jelly, wine, juice, syrup, medicinals
Currant, European Black	Ribes nigrum	"Consort", "Blacksmith", "Brodtop" "Ben Sarak", "Laxton's Giant", others Many Many "Elegant", "Redstar", "Yellow", "Redstone" "York" "Adams" "Pixwell", "Welcome", "Clark" "Jostagrande", "Jostina", "Red Josta"	fresh fruit, jelly, wine, juice, syrup, medicinals
Currant, Red Currant, White Dogwood, Corneliancherry Elderberry	Ribes rubrum Ribes sativum Cornus mas Sambucus canadensis	Many Many "Elegant", "Redstar", "Yellow", "Redstone" "York" "Adams" "Pixwell", "Welcome", "Clark" "Jostagrande", "Jostina", "Red Josta"	fresh fruit, jelly, wine fresh fruit, jelly, wine fresh fruit, jam, sparkling wine fresh fruit, jelly, wine, juice, tea, medicinals fresh fruit, jelly, wine, juice, tea, medicinals fresh fruit, jelly, juice fresh fruit, jelly, juice fresh fruit fresh fruit, jelly, wine tea fresh fruit fresh fruit, jam, wine tea, syrup, jelly fresh fruit, jelly, syrup, juice
Gooseberry Jostaberry Kiwi, Hardy Mulberry New Jersey Tea (Redroot) Pawpaw Persimmon Rose, Wild Saskatoon (Juneberry)	Ribes hirtellum or R. uva-crispa Ribes nigdrolaria Actinidia araguta Morus rubra Ceanothus americanus Asimina triloba Diospyros virginia Rosa arkansana Amelanchier alnifolia	Many None None "Atroranguinea" "Cardinal" "Cheyenne" "Bailey's Red" "Colorado Red Osier" "Allemands Compact" "Sibirica" "Kesselingii"	flowers, forced speckled burgundy stems branches with orange berries dark, blood red or burgundy stems, suckers freely bright red-orange stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely, few lateral branches bright coral-red stems, suckers freely brownish purple stems, suckers freely
<b>WOODY DECORATIVE FLORALS</b>			
Apple, Crabapple Birch, Red (Sweet) Bittersweet, American Dogwood, Bloodtwig Dogwood, Redosier	Malus spp Betula lenta Celastrus scandens Cornus sanguinea Cornus sericea Cornus sericea var. coloradensis Cornus sericea Cornus sericea Cornus sericea Cornus alba Cornus alba Cornus alba	Many None None "Atroranguinea" "Cardinal" "Cheyenne" "Bailey's Red" "Colorado Red Osier" "Allemands Compact" "Sibirica" "Kesselingii"	flowers, forced speckled burgundy stems branches with orange berries dark, blood red or burgundy stems, suckers freely bright red-orange stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely, few lateral branches bright coral-red stems, suckers freely brownish purple stems, suckers freely
Dogwood, Tatarian	Cornus alba Cornus alba Cornus alba	Many None None "Atroranguinea" "Cardinal" "Cheyenne" "Bailey's Red" "Colorado Red Osier" "Allemands Compact" "Sibirica" "Kesselingii"	flowers, forced speckled burgundy stems branches with orange berries dark, blood red or burgundy stems, suckers freely bright red-orange stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely red stems, suckers freely, few lateral branches bright coral-red stems, suckers freely brownish purple stems, suckers freely



# Specialty Forest Products

## 4. Handicrafts and Specialty Woods

Specialty woods and other natural materials are often used by local artisans in handicraft products. The same "basket" or "Streamco" willow (*Salix purpurea*) used for streambank stabilization can be made into bent willow furniture, and also is used in floral arrangements. The deep lesions on "diamond willow" stems are carved and polished by craftsmen to create beautiful walking sticks, sometimes selling for up to \$100 or more.

Smooth sumac, hickory, and aspen saplings are converted to walking sticks and mass marketed. Wood carvers use cottonwood bark and many types of "character" woods such as butternut, basswood, figured walnut, and catalpa. Burlwood of many species is used to create decorative inlays, furniture and art pieces. Similarly, turning "spalted," or partially decayed and stained wood, reveals beautiful grain highly valued by craftsmen. Pine cones and other seed capsules and pods are widely used in craft, potpourri and seasonal products.



Delicious, natural food products



Imaginative use of hazelwood in furniture

## Specialty Forest Products With Commercial Markets

Species	Scientific Name	Cultivars for SFP Production	Products/Characteristics
Dogwood, Yellow Twig Forsythia spp.	<i>Cornus sericea</i> <i>Forsythia ovata</i> <i>Forsythia ovata</i> <i>Forsythia ovata</i> <i>Forsythia ovata</i> <i>Forsythia X intermedia</i>	"Flaviramea" "Meadowlark" "Northern Sun" "Sunrise" "Northern Gold" "Lynwood Gold" "Sparkleberry"	yellow stems, suckers freely bright yellow flowers, forced, hardy clear yellow flowers, forced bright yellow flowers, forced golden yellow flowers, forced, hardy brilliant yellow flowers, forced branches with persistent bright red berries male, no fruit, pollinator for "Sparkleberry" branches with persistent red berries male, no fruit, pollinator for "Winter red"
Holly hybrid	<i>Ilex verticillata</i> x <i>Ilex serrata</i>	"Apollo"	flowers, forced
Holly, Winterberry	<i>Ilex verticillata</i>	"Winter Red", many others	branches with persistent bright red berries
Plum, Peach, Cherry	<i>Prunus</i> spp.	"Gentleman"	male, no fruit, pollinator for "Winter red"
Willow, Purpleosier (Basket)	<i>Salix purpurea</i>	Many	flowers, forced
Willow, Corkscrew	<i>Salix matsudana</i>	"Tortuosa"	green flexible branches, also used in baskets
	<i>S. alba</i> "Tristis" X <i>S. matsudana</i>	"Golden Curls"	twisted branches
	<i>S. matsudana</i> X <i>S. alba</i> "Britzensis"	"Scarlet curls"	twisted branches
Willow, Pussy ( Japanese Giant)	<i>Salix chaenomeloides</i>	-	twisted branches, red in winter
Willow, Pussy (Goat)	<i>Salix caprea</i>	-	red flower buds, large (1-3") pink-rose catkins
Willow, Pussy (Black)	<i>Salix melanostachys</i>	-	catkins (1"), forced
Willow, Pussy (Rosegold)	<i>Salix gracilistyla</i>	-	black catkins with red anthers, forced
Willow, Flame	<i>Salix</i> "Flame"	"Flame"	pinkish-reddish catkins, forced
Witchhazel, Common	<i>Hamamelis virginiana</i>	-	bright red-orange stems
Witchhazel, Hybrid	<i>Hamamelis</i> x <i>intermedia</i>	"Jelena", "Diane", "Ruby Glow", "Arnold Promise", "Pallida"	yellow flowers, forced yellow or red flowers, forced
<b>MEDICINALS AND BOTANICALS</b>			
Black Cohosh	<i>Cimicifuga racemosa</i>	None	root (estrogenic, sedative, anti-inflammatory)
Blackhaw	<i>Viburnum prunifolium</i>	None	bark of root, stem (uterine tonic, sedative, antispasmodic)
Bloodroot	<i>Sanguinaria canadensis</i>	None	root (emetic, stimulant)
Blue Cohosh	<i>Caulophyllum thalictroides</i>	None	root (uterine stimulant)
Blue Gentian	<i>Gentiana saponaria</i>	None	root (digestive)
Culver's Root	<i>Veronicastrum virginicum</i>	None	root (laxative)
Dandelion (root)	<i>Taraxacum officinale</i>	None	root (laxative, diuretic)
Elderberry	<i>Sambucus canadensis</i>	None for medicinal purposes	flowers (mild stimulant, carminative, diaphoretic)
Ginkgo, Maidenhair tree	<i>Ginkgo biloba</i>	None	leaves (aid memory)
Ginseng	<i>Panax quinquefolius</i>	None	root (tonic, stomachic)
Goldenseal	<i>Hydrastis canadensis</i>	None	root (astringent, tonic, antiseptic, diaphoretic, styptic)
Mayapple	<i>Podophyllum peltatum</i>	None	root, resin (cathartic, stimulant)
Nettle	<i>Urtica dioica</i>	None	herb (astringent, diuretic)
Partridgeberry	<i>Mitchella repens</i>	None	vine (astringent, diuretic)
Sassafras	<i>Sassafras albidum</i>	None	bark of root, pith, leaves (Aromatic, demulcent)
Saw Palmetto	<i>Serenoa repens</i>	None	berries (anti-inflammatory)
Skullcap	<i>Scutellaria lateriflora</i>	None	herb (sedative, nervine, antispasmodic)
Slippery Elm	<i>Ulmus rubra</i>	None	stem and root bark (antiseptic, astringent)
Smooth Sumac	<i>Rhus glabra</i>	None	stemwood (astringent, antiseptic)
Staghorn Sumac	<i>Rhus typhina</i>	None	berries (astringent, antiseptic, beverage)
Solomons's Seal	<i>Polygonatum biflorum</i>	None	root (treat skin irritations, indigestion)
Stoneroot (Horse-balm)	<i>Collinsonia canadensis</i>	None	root (diuretic, astringent)
Walnut, Black	<i>Juglans nigra</i>	None for medicinal purposes	nutshell ("soft" abrasive in skin cleansers)
Wintergreen	<i>Gaultheria procumbens</i>	None	leaves, Oil of Gaultheria (astringent, analgesic, anti-inflammatory, antiseptic)
Witchhazel	<i>Hamamelis virginiana</i>	None for medicinal purposes	bark, leaves astringent

Handicraft products can be derived from forest-grown trees, shrubs, vines, pine needles, etc. Most of these products are not produced commercially, but are instead harvested from existing forests. Markets can be small and easily overwhelmed with excess supply.



# Specialty Forest Products

## Making conservation pay: producing specialty forest products in agroforestry settings

Specialty forest products come from woody plants that can be planted in ways that provide many environmental and conservation benefits. They can be planted in a field or farmstead windbreak, in a large community windbreak that protects an entire rural town or village, or in a living snow fence. Wind protection increases crop yields by up to 20%, reduces energy costs around the home and farmstead, and trims snow removal costs. Woody plants can also be used in streamside buffer strips to intercept pollutants. SFP-producing plants used in conservation plantings can reduce soil erosion, improve water quality, enhance wildlife habitat, and improve your own quality of life. They also can be arranged in mass groupings or "orchards" to maximize production efficiencies.

Even a backyard can be transformed into a low-maintenance "edible woody landscape" for both people and wildlife, filled with species that produce high quality nuts, berries, and mushrooms. Kids want a snack? Send them into the backyard to "graze" for fruits and nuts. And if you don't have time to harvest the "fruits" of your yard, the local wildlife will certainly benefit from the available food and cover.

As with any crop, challenges abound. The timing of harvest, perishability of the product, available labor, wildlife pressure, insects and diseases, year-to-year production variability, and lack of formalized subsidy or crop insurance programs all require planning and management.



Produce red-stemmed dogwoods in your windbreak

## Marketing specialty forest products for supplemental income

Most SFPs can be sold in the marketplace. Some markets are quite large and well-structured with both wholesale and retail outlets (decorative florals, some fruits and nuts). Other markets are more restricted (a local jelly company, winery, floral shop, craftsperson, the town farmers' market, or a roadside stand), and are better suited for the small producer. Large or small, all specialty forest product markets are "niche" markets, requiring far greater marketing efforts than do traditional crops.

Smaller niche markets may be easily overwhelmed by excessive supply. Prices can be volatile, depending on product supply and quality. Some products have seasonal markets (pussy willow in the spring, holly during the holiday season, berries when ripe), others are more year-round (e.g., curly willows). It definitely pays to line up markets *before* production investments are made. Solid marketing and quality production can earn a producer higher prices and consistently greater profits.

## Summary

Specialty forest products produced in woodlands or in agroforestry plantings can provide important supplemental income to rural and semi-rural residents, and at the same time improve the environment. Successful producers clearly need to be skilled growers *and* effective marketers of their products.

## Selected Resources

- Agroforestry information:  
<http://www.agroforester.com>
- *Conservation Trees*. National Arbor Day Foundation. [www.arborday.org](http://www.arborday.org)
- *Farming the Forest for Specialty Products. Proceedings of the North American Conference on Enterprise Development Through Agroforestry, Minneapolis MN, October 4-7 1998*. 1999. S. Josiah, Editor. University of Minnesota: 800-876-8636, or [www.extension.umn.edu](http://www.extension.umn.edu)
- *Income Opportunities in Special Forest Products: Self-help Suggestions for Rural Entrepreneurs*. 1993. M.G. Thomas. USDA Forest Service, Ag. Info. Bulletin 666.
- The National Agroforestry Center produces a number of SFP-related publications:  
<http://www.libfind.unl.edu/nac/pubs/>
- Non-Wood News  
FAO:<http://www.fao.org/forestry/FOP/FO/PW/NWFP/newsle-e.stm>
- North American Fruit Explorers:  
<http://www.nafex.org>
- International SFP:  
<http://www.fao.org/forestry/FOP/FOPW/NWF/nwfp-e.stm>
- SFP use and markets:  
[http://www.sfp.forprod.vt.edu/special\\_fp.htm](http://www.sfp.forprod.vt.edu/special_fp.htm)
- SFP information by species:  
<http://www.hort.purdue.edu/newcrop/default.html>
- SFP reference info.:  
<http://www.ifcae.org/ntfp/>
- *Woody Decorative Floral Assessment for Nebraska*. 2000. D. Lambe. University of Nebraska-Lincoln.

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### Productive Conservation

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