Some Northwest Native Medicinal Plants:

Comments on sustainable wildcrafting, cultivation potential and propagation

Michael Pilarski
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Friends of the Trees Society
PO Box 4469
Bellingham, WA 98227

The following notes represent a work in progress. My eventual aim is to cover more species and to expand and polish the entries. This edition briefly covers 58 species in 35 genera.

Sustainability Category Key:

A. Non-native, invasive, widespread, abundant, weedy plants which are generally considered noxious.
B. Non-native, abundant plant species which are generally not considered noxious.
C. Native, widespread, abundant plant species.
D. Native, locally abundant plant species.
E. Native plants. Widespread, but seldom or never abundant in the landscape.
F. Native plants. Rare, threatened and endangered locally but not throughout its range.
G. Native plants which are abundant locally but threatened in most other parts of its range.
H. Native plant species which are officially classified as rare, endangered or threatened. The "Red List". It is illegal to harvest any part of these plants.

Angelica

Worldwide there are 50 species. *A. archangelica* (European Angelica) and *A. sinensis* (Dong Quai) are two well-known medicinal species and large tonnages of each are grown each year. There are 8 species of *Angelica* listed in Hitchcock and Cronquist's *Flora of the Northwest*. Precise identification is important because of angelicas' resemblance to the very poisonous water hemlock (*Cicuta douglasii*). *Angelica arguta* is the species I am most familiar with.

Sharptooth Angelica. *Angelica arguta.*

A. arguta has a wide range. I know it from the North Cascades in eastern Washington, but it ranges from southern British Columbia over to southwest Alberta, Wyoming and Utah. It is found south through Oregon and into Northern California. Hitchcock & Cranquist note it as common in the Willamette Valley.

Sustainability category E. In the interior Northwest montane forests it usually appears in small populations constricted to streamsides, springs, marshes, and wetlands. In these montane forests, overharvesting could diminish or eventually wipe out local stands.

However, in the subalpine wet meadows of the North Cascades, sharp-tooth angelica can be an abundant and conspicuous element and the plants are more robust than those from lower elevations. The older plants are quite large, with large fleshy taproots and large fleshy side-roots. 5 to 10-pound roots are common. In subalpine meadows, I would venture a guess that a sustainable harvest level could be as much as 5% of individual plants and perhaps up to 10% of biomass, with a two or three year break between harvests. However, a large percentage of the subalpine meadows are not available for harvest because of being in designated Wilderness areas, National Parks, State Parks, National Recreation Areas. Most of the rest is in National Forests, with only a tiny percentage in private hands.

Cultivation potential. This depends mostly on how *Angelica arguta* measures up to the other native and non-native *Angelica* species in terms of healing applications. *A. arguta* does not show up much in the ethnobotany literature. A number of astute, careful laboratory analyses of *A. arguta* will have to be made and a track record of favorable clinical trials completed before we are likely to see many orders. Bear in mind that there is toxicity in some *Angelica* species and that *A. sinensis* is aged before use.

Sea-watch, Seacoast Angelica, *Angelica lucida*
Henderson's Angelica, *A. hendersonii*

These two species are found hugging the Pacific Northwest ocean coastline on beaches, sand dunes, and bluffs. All relatively rare habitat spots in the landscape. I have never seen these species offered in commerce, though I suspect there is a small local market. *A. lucida* has a very wide range being found along the shorelines of the north Pacific rim from Siberia to northern California and also along the Atlantic Ocean from Labrador to New York.

Sustainability category E. Given these two species relatively rare habitat niches which are mostly in various parks or reserves, not much will be available for harvest. Harvest, where done at all, should be light.

Cultivation potential. Steven Foster has written that one of our *Angelica* species is almost identical to *A. sinensis* (Dong Quai), and *A. lucida* may have been the species he was talking about, which would give it a large market potential.

Kneeling Angelica, *Angelica genuflexa*

One of the larger members of the genus. Its main leaf stalks are reflexed into a "kneeling" position.

Propagation: Angelica seed has long enjoyed a reputation for being finicky. Most experts advise sowing seed as soon as ripe, or even slightly upripe. Cold stratification is advised to break dormancy of stored seed. Viability is short lived. With experience, seed sowing would be the least expensive way to make new plants. Angelica propagates well from crown divisions. This is a reliable way a grower could build up stocks.

Arnica,

Worldwide there are 30 species. The European species *A. montanum* has been highly regarded for centuries as effective for trauma, bruises, sprains, sore muscles and joints. *Flora of the Northwest* lists 14 *Arnica* species native to the Northwest. Comments on 6 species follow.

Heart-leaved Arnica, *Arnica cordifolia*

The most well known of our native species in the trade. The Northwest's most widespread and abundant arnica, and it also has the largest flowers. It is the arnica I have harvested the most. Its elevational range is extensive. I have harvested it from under 500' to up to 6,000' from May into August.

Sustainability category C. In good bloom years, the harvests can be large and still be sustainable. Up to 10% of flowers or 5% of stem/leaf biomass in good years. You only harvest stems which have flowers in full bloom. Do not harvest in bad years. See my several page Arnica report for more details.

Meadow Arnica, *Arnica fulgens*

Another wide-ranging species from B.C. and Sask. down to Calif and Colo. Found at lower elevations and in dryer more open habitats then *A. cordifolia*. I have seen it a conspicuous element of open meadows in Idaho at 5,000' and growing with sagebrush in the Eastern Cascades at 3,000'. Due to its hotter and sunnier habitats it may have higher oil content and higher medicinal constitu-

ent levels. If it turns out to be particularly potent, it might be profitable under cultivation, even though it is a smaller plant then most other species. Andrew Chevallier in *The Encyclopeia of Medicinal Plants* states that "In North America, *A. fulgens* is used in place of *A. montanum*".

Streambank Arnica, *Arnica amplexicaulis*

Found mostly in subalpine meadows, avalanche chutes, alongside streams and adjacent moist woodlands. A tall, lanky species with multiple flowerheads of small flowers. Makes for a faster harvest time when collecting whole aboveground plant, but slower if harvesting just flowers (as compared to the larger-flowered *A. cordifolia*). A large percentage of stands are not available for harvest because of being in designated Wilderness areas, National Parks, State Parks, and National Recreation Areas.

Leafy Arnica, *Arnica chamissonis*

A Rocky Mountain cordilleran species. It has tested out well for medicinal constituents in lab tests and might be worth cultivating commercially.

Alpine Arnica, *Arnica alpina*

Janice Schofield says that *A. alpina* is the same species as the European *A. montanum*. This species' natural range includes the high mountains of Alberta, BC and Montana. Hitchcock and Cronquist say that *A. alpina*'s range is circumpolar in distribution and includes the Alps; and that our A. alpina is var. *tomentosa*.

Mountain Arnica, *Arnica latifolia*

This is a common species from Alaska south to Colorado and California. It is often as large as *A. cordifolia* in flower and plant. One of my botanist friends says it doesn't have glandular hairs and so he suspects it will have less medicinal value. Is he right?

Balsamroot, *Balsamorhiza* spp.

There are 12 species, all from western North America. Native people used to collect the seeds, parch them and grind for use as a condiment. The root was processed into a starch food. Nancy Turner says they harvest mid-size roots, about the size of carrots, leaving the large roots for seeding and the baby roots for future harvests. The *Flora of the Northwest* lists 9 species and various subspecies and varieties. *B. sagittata* is the species I am familiar with in north-central Washington, and it is the most common and widespread species of the genus. *B. hookeri*, from my brief experience, also has a good resin content. It is unlikely all the species have been compared side by side for their medicinal constituents. Growing conditions and soils may have as much, or more, to do with constituent content than specie.

Arrow-leaf Balsamroot, *Balsamorhiza sagittata*

This species is very abundant and widespread in dry habitats throughout the interior Northwest, but is especially strong in the East Cascades. On some hillsides it is the dominant plant, and during bloom time, entire hillsides light up with its intense yellow. One of the reasons for its abundance is that it is an increaser under grazing.

Sustainability category C. This plant is hardly found in the marketplace, but according to Michael Moore it has many useful properties and we may see increasing use. In which case it would be easy to supply large, sustainable harvest levels from the low-elevation private lands where it is so abundant. Older plants get a huge taproot which grows deep into the soil and they are hard to dig. The outer bark is very thick and heavy, resembling cottonwood tree bark in outward appearance, but being much denser and with lots of crystalline resin. In some roots the inner portions also have resin deposits, while others do not. Older roots tend to have the most resiny elements. I would suspect that plants with higher resin quantities throughout will have more of the medicinal constituents. The leaves have various anti-fungal applications, such as for athlete's foot.

Cultivation potential: Since the plant is relatively slow-growing and there is so much wild abundance, I would not expect cultivated stands to be a profitable venture for some time to come. How the other species stack up against *B. sagittata* is unknown (to me).

Propagation: Seed: A cool, moist stratification for eight to twelve weeks at 1-4 degrees C. is required to break dormancy. Fall planting can be done, but rake the seeds in as they are palatable to many animals. Deer eat the seedheads, and rodents collect them. The crowns can be successfully replanted, but whether they'll produce a reasonable taproot is unknown.

Butterbur, *Petasites* spp.

Worldwide there are 12 species including two in the Northwest. The circumboreal species *Petasites frigidus* in our region is subdivided into var. *palmatus* at lower elevations and var. *nivalis* at higher elevations. *P. sagittatus* is found in the interior Northwest mountains. Most of the small trade in this species is from *P. frigidus* var. *palmatus*.

Sustainability Categories D or E, depending on the locale. Some stands are small and could easily be wiped out with repeated "clearcutting". It is difficult to get all of the rhizome fragments out even when trying, so they would keep coming back from whatever root is left. Sustainable harvesters would only take 10% or less a year of root biomass. It likes disturbance so deliberately cutting back competition during harvest would help it maintain its place in the ecosystem. In some localities it is common, in others not so. The stands I noted in the Oregon Coast ranges impressed me with their large plants.

Cultivation potential: If this plant's popularity picks up, then cultivation would be a good bet. The roots/rhizomes grow fast and they propagate easy from rhizome cuttings.

Cleavers, *Galium*

The world has 400 *Galium* species. The Northwest has 13 native species. One of our few lymphatic tonic herbs.

Cleavers, *Galium aparine*

Galium aparine is a cosmopolitan weedy species which is common in the Northwest and is the species predominantly in commerce.

Cultivation potential. High. There is a big demand for *Galium aparine*. The trick is harvesting it without dragging everything in its vicinity along with it since it is minutely armed with thousands of tiny grappling hooks. If you can get if off the ground and clean cultivate, you could harvest easily and quickly. For instance grow them on Tatura type Y-shaped trellises that allows vines (or tree fruits) to maximize sun interception. Trellising is expensive in terms of labor and/or money, so the other option is to grow it in habitat niches which allow natural growth, although the harvest and cleaning will be more time consuming. It likes to clamber over disturbed logging skid roads, so is a choice for the sun corridors that roads make through forests. Cleavers can grow in full sun to half shade.

Propagation: Seed. Seed pelletizing might be an advisable method for broadcast seeding to help get the seed down to the soil, hold moisture around it and protect seeds from rodent lunches.

Cottonwood Buds, *Populus trichocarpa*

Picking cottonwood buds is a pleasant, aromatic pasttime on sunny late-winter days. It is best to pick them before the season is so advanced that the buds are just oozing with their very sticky sap. This sap is harvested in large quantities by bees, who do a little alchemy with it and turn it into propolis to seal up and disinfect their hives. It is the precursor to propolis. The biggest and fattest buds with the highest content of resin are way up in the crowns of the largest trees. Harvesting the skinny, little buds found on the branches close to the ground is a slow way to get a pound of buds. So the wildcrafter has to keep an eye open for windthrown trees

or where tops have blown out so that the big top buds are accessible. Beaver have a fondness for gnawing down cottonwoods and I have seen them tackle 4-foot diameter old-growth cottonwoods (perhaps a group project). So beavers and cottonwoods are good combinations for wildcrafters. The best picking though, is where loggers have cut down stands of cottonwoods and left all the slash on the ground.

Sustainability category C. Wildcrafters are a very, very minor threat to cottonwoods compared to loggers and beavers. I would never condone cutting down cottonwoods just to pick the buds. Take what nature (or loggers) deliver.

Cultivation Potential. Low for purely medicinal production. However, there are many reasons to plant cottonwoods and where we do plant them, the buds can eventually be a side income.

Coyote Mint, *Monardella odoratissima*

Worldwide there are 12 species. The Northwest has one species. We have two varieties: var. *odoratissima* and var. *discolor*.

Sustainability category E. Coyote Mint is one of the Northwest's most dryland members of the mint family. It grows on dry, rocky hillsides and stabilizes scree slopes. You have to watch your footing whenever harvesting this plant. Which makes it easy for pickers to cause erosion unless they are exercising great care. This is not a common plant in north central Washington, or more exactly, its habitat niches are separated by large expanses of other vegetation types. I only harvest from about 10% of plants and on these only clip 10-20% of the current season's growth. It is a short plant, and so even sizable stands will only yield several pounds of dry herb. In some parts of it's range it is more abundant in the landscape, and some of these areas could sustain a careful harvest level, but I would not like to see many people wildcrafting this in North-central Washington.

Cultivation potential. This may offer good potential. I doubt anyone has put in a commercial scale planting of this species. The first growers will have whatever market they can drum up. Both the common name and the botanical name are great for marketing. A plant for the sunny interior Northwest. Well drained soil is required. Its drought tolerance means it can be used as a dryland crop or where irrigation water is limited. We can expect it will put on extra growth and higher yields where judiciously irrigated. It is similar to hyssop in growth habit.

Propagation. Fall sown seed or in flats in early spring after a 30-60 days cold stratification period.

Devil's Club, *Opolopanax horridum*

The only other species in the genus is *O. japonicus* from Japan.

Sustainability category D. Collect only where it is abundant. Some people are already worried about sustainability of the resource, even though commercial harvests have just begun.

Culitvation potential. High. I expect to see a growing demand for cultivated stock of this useful medicinal.

Propagation. Seeds are difficult. Recumbent stem cuttings work. See my extensive article on Devil's Club for more details.

Elderberry

Blue Elderberry, *Sambucus cerulea*

Sustainability category D. This species is rare west of the Cascades, but common east of the Cascades.

Cultivation potential. High. There is a decent demand for elderflowers. The demand for elder berries has increased tremendously in the past 5 years, mainly due to marketing of elderberry juice concentrate in health food stores as a remedy for influenza. The berries can also be used for the traditional American elderberry wine. They also make a nice jelly. This gives elder growers a chance to market flowers and berries in a number of different market pathways. Elder plants are quick to yield. They can start fruiting in the 2nd or 3rd year and be fruiting heavily in five years. Pretty good for a fruit.

Propagation. A lot of plants are grown from seed and it is the cheapest method when growing plants by the tens of thousands. For smaller planting, I would recommend growing plants from hardwood cuttings. Plants grow easily from cuttings and make big plants the first year.

Red Elderberry, *Sambucus racemosa*

Most of the elderberry west of the Cascades is the red elder. The flowers are probably just as good medicinally as those of the other species. The flower and berry clusters are smaller then blue elder and the berries are generally considered inedible if not slightly toxic. They are good wildlife plants, but I wouldn't recommend them commercially.

False Solomon's Seal, *Maianthemum racemosa*

Until recently the botanical name was Smilacina racemosa. Currently there is a tiny demand for the rhizomes/roots, primarily for use in cough medicines.

Sustainability category D. It is found in suitable habitats in most parts of the Northwest, but more often then not, in small isolated patches. Do not harvest except from large patches, and then only take a small amount.

Cultivation potential. Low for medicinal sales. With good marketing, you might be able to create a small market. However, it is a first-class native wildflower with its showy flower plumes. I suspect there is much more money to be made in the ornamental market with this species.

Goldenrod, *Solidago canadensis*

In the Northwest we have 11 native species, some with a number of distinct varieties. *Solidago canadensis* is the most common species and the species in the trade. Goldenrod is widespread and can be locally abundant. Even so, I have to range many miles to fill my small orders. It has a solid history of medicinal use and there is a sizable demand.

Sustainability category D. The patches mainly spread by underground rhizomes, but seeds are important for long distance dispersal. The flowers are an important source of necter for insects late in the season. So for this reason, we would not want to take more than 20% of the blooms from harvested wild stands.

Cultivation potential: I would recommend cultivating it for sale as well as using it in native plant restoration and mixed permaculture plantings. The flowerheads are best picked just prior to full bloom. When dried, the flowers (like many other composites) often go to fluff and do not much resemble golden-yellow flowers. So, if you're drying it, harvest when only a small percent of flowers are open. For the fresh market, pick when the first half of the flowers are open.

Propagation: Easy to grow from rhizome root pieces.

Gumweed, *Grindelia* spp.

There are 50 to 60 species worldwide with 5 species and sub varieties in the Northwest.

Puget Sound Gumweed, *Grindelia integrifolia.*

G. integrifolia var. *integrifolia* is found in various nonmarine habitats in Puget Trough from Vancouver Island to Willamette Valley. Var. *macrophylla* is found in salt marshes and rocky shores from Alaska to northern California. Most authors list it as common on our shorelines and it can be the most conspicuous element on many beaches during its extended bloom time in summer. Most of these areas are off limits to collecting due to being in public space or someone's beachfront property.

Sustainability category D.

Culitvation potential. I rate it as high. It has a small spot in the herb trade at present, but is likely to grow. We should be cultivating this species.

Resin-weed, *Grindelia squarosa*

This is the interior Northwest species common in Montana and Idaho.

Sustainability category ? I am not familiar enough with its territory to venture an opinion.

Hawthorn

Black Hawthorn, *Crataegus douglasii*

Columbia Hawthorn, *Crataegus columbiana*

Sustainability category D. Our native species are not in the medicinal trade yet (to my knowledge), but it most likely has similar actions to the European hawthorn species currently in the trade. *C. douglasii* is the species I encounter the most, and I know of little valleys and canyons in eastern Washington and Montana where it is the dominant riparian tree. The berries are larger than those of the European *C. monogyna* and so might fill a bucket even quicker, although I must say the thorns on the native species look longer and stouter. Whichever species you pick, a wildcrafter has to love danger and pay attention to their fingers! My observations of *C. douglasii* is that their bloom is sparser then the European species and so they may have as good a flower yield.

Hedge-nettle

Cooley's Hedge-nettle, *Stachys cooleyae*

Sustainability category E.

Cultivation potential. Low, since hardly anyone uses this herb. Reading Michael Moore or the many ethnobotany texts that mention it, gives me the opinion this might be a famous herb someday.

Huckleberry, *Vaccinium* spp.

Worldwide there are about 450 species. *Flora of the Northwest* lists 14 native species. The circumboreal specie *V. myrtillus* (European Bilberry), the species most used medicinally, is also native to parts of the Northwest. Some of our native species may be as efficaceous or even better than this specie, but time and further laboratory and clinical trials will tell. See my more detailed discussion of this genus elsewhere in this report.

Kinnikinnik, *Arctostaphylos uva-ursi.*

Worldwide there are 50 species. *Flora of the Northwest* lists 6 native species.

Sustainability category C. Kinnikinnik is abundant in many areas and in such places sustainable harvesting is feasible. It is only the ends of the trailing woody stems that are utilized so we do not kill any plants. I go for top quality rather than bulk, so I only clip the end 4-6" of the current year's growth from less than 5% of the plants. One of the best urinary antiseptics for acute and chronic cystitis and urethritis. Caution: do not usewhile there is a simultaneous kidney infection and no more than 7-10 days at a time.

Lovage, *Ligusticum* spp.

There are about 25 species worldwide. *L. sinense* is highly regarded in Chinese medicine. 6 species are native to the Northwest, and a 7th species, *L. scoticum*, is moving down the BC coast. *Ligusticum* roots were, and are, among the most highly favored healing plants of indigenous people throughout the Northwest. The dried roots make good barter items or gifts. The species aside from those listed below are: *L. filicinum, L. tenuifolium, L. verticillatum* and *L. apiifolium.*

Osha, *Ligusticum porterii*

The famous osha of the Rocky Mountain cordillera from Montana to Colorado and the high southwest mountains. Osha is still used in many Indian and Hispanic households throughout the Southwest. Medicinal plant conservationists have the red flag out on osha. From my conversations with other wildcrafters, I would surmise that in some localities it is being overharvested; but that in much of its range it is still abundant. Whatever the case, there is undoubtedly a strong market for organically-grown osha. It grows one of the largest roots of the the genus. This species is not listed by Hitchcock and Cronquist, so its range must not quite extend into the Northwest, even though people tell me it is in Montana.

Canby's Lovage. *Ligusticum canbyii*

This is the species I have personally harvested. It is at the eastern edge of its range here in the East Cascades of north central Washington. It ranges to the western slopes of the Rocky Mountains in north Idaho and northwest Montana and into the Blue Mountains of northeast Oregon. I find them in the wet subalpine meadows. Conifer trees in the meadows often have a bevy of these plants under their low spreading branches. They are doing better under the trees because of the protection from the elements, or because of some symbiotic actions, or perhaps because they are more protected from the sheep grazing the area has been subjected to. Their roots are quite hairy, especially at the crown which is one of its main characteristics that distinguish it from the poisonous water hemlock. Its roots often have a human form, and even more intriguing, individual plants will often consist of several human forms joined together at one of more points. Like two roots grafted together. Even the biggest roots are seldom more than an ounce in dry weight. It sounds like *L. porterii* and *L. grayi* both have much larger roots than this species. Nonetheless, I would still recommend cultivating this species.

Sustainability category E. Overharvesting would be a concern in many locations. Much of it is in subalpine habitats. I have heard of people people commercially promoting this in the Nez Perce country of Idaho.

Gray's Lovage, *Ligusticum grayi*

Taylor & Douglas note that is has a stout taproot and that it is locally abundant on open to wooded slopes and in adjacent subalpine meadows of the Cascades in Washington and adjacent B.C.

Beach Lovage, *Ligusticum scoticum*

This is a widespread circumboreal species which extends from Alaska down the British Columbia coast. I am not sure at this time if it is native there or if it is a naturalized European specie. It is esteemed as a salad vegetable and has medicinal properties. Although it may not have reached Washington State yet, it would undoubtedly thrive here. It offers market potential as a gourmet salad ingredient. Another viewpoint is since it isn't native here, we wouldn't want to encourage naturalization here.

Lomatium

About 70 species, all found in the western US, with about 40 species in the Northwest. The Northwest is the center of diversity for this genus.

Lomatium dissectum.

This is the species which has received the most attention. Several other species may be comparable, but most of the genus are food rather than medicine. *Lomatium dissectum* has been rated as the most potent anti-viral and anti-bacterial native to western North America.

Sustainability category D. It can be a common plant in much of our semi-arid zones, particularly in bitterbrush habitats. They are slow-growing, long-lived perennials. Harvesting has to be light and not just in the larger size classes. In fact, go even lighter on the older age classes, since they are the most successful seeders.

Cultivation potential. Low to moderate. There is a rather large wild resource base and the plant is relatively slow growing. Some sources will prefer cultivated to wild harvested roots and so a

market is available to anyone who will take the years to bring a crop to harvest size.
Propagation. From seed. There are tricks to good germination rates. See my larger *Lomatium dissetum* report.

Nettles, *Urtica dioica*

Worldwide there are 50 species. In the Northwest, we have *Urtica dioica* ssp. *gracilis* which is further subdivided into 6 distinct varieties. Some taxonomists give them species status.
Sustainability category C in the maritime Northwest. In the maritime it is ubiquitous in moist areas, woodland edges and as an understory in alder forests. There are many large patches on private land.
Sustainability category D in the interior Northwest. In the interior nettles are mainly found in moist soils or in barnyards and old habitations. There just isn't as much in the landscape.
Cultivation potential. I rate nettles as one of the best bets for cultivation. There is a big demand. The price for run-of-the-mill dried nettles isn't great, but if you can find markets who will pay a premium for quality you can do well. The roots are also in the medicinal marketplace and the unripe seed "catkins" also have potential. It yields one of the strongest natural fibers.
Propagation. From seed or by cuttings of the long rhizomes. See my longer article on Nettles.

Oregon Grape

Oregon Grape. (*Mahonia* spp.) Also known as *Berberis* by some people. The *Mahonia* genus has a very wide range in western North America from Mexico to Canada.

Tall Oregon Grape, *Mahonia aquifolium*

Sustainability category C or D, depending on the locality. *Mahonia* has a network of stolons running under the ground and grows in patches. I harvest without using digging tools and pull up what parts of the underground stolons I can until they inevitably break off. The remaining stolon/root systems continue to grow and spread. I do not take more than 5% of a stand (and usually less then 1%) and never two years in succession. Using these guidelines, a patch can be harvested indefinitely. It would be difficult, but I suppose possible, for a person to wipe out a particular stand in they tried hard enough for enough years in succession.
Cultivation potential. Moderate to high. At this time there is a lot of this species in the wild and it will continue to supply commercial demands for decades to come. However, there are herbalists who will pay a premium for cultivated botanicals out of concern for wild population conservation. The wholesale price for dried root has been low, but as the more accessible areas are picked over, the price should go up. This is not a particularly fast-growing plant, but it should make marketable size roots in 3 to 5 years if you give them what they want.
Propagation. Generally from seed. Recently I've been told they will grow from root cuttings, which if true, might give somewhat larger plants the first year. And perhaps a more horizontal root system, which may be advantageous at harvest time, but may make transplanting more difficult. Seed grown plants have a definite taproot, and hence are easy to plant with a hoedad.

Low Oregon Grape, *Mahonia nervosa*

This is the species found commonly in the moist rainforests of the maritime Northwest. They are seldom found in full sun, unless they've survived their sheltering forest being clearcut. They are a smaller plant then *M. aquifolium* above ground and even more so below ground. They less often form taproots and most roots are long pencil-size runners. In other words it takes more time to collect a given weight of roots. This means wildcrafters will generally pass this species up, if they have good stands of tall Oregon grape around. This species is less known in the herbal trade and it is harder to sell. Most likely it contains very similar constituents to *M. aquifolium*, although possibly in slightly less concentrations.
Sustainability category C,
Cultivation potential. It is a beautiful plant for light shade situations and worth planting in appropriate habitats. However, for commercial plantings, I would have to favor the taller and more robust *M. aquifolium.*

Creeping Oregon Grape, *Mahonia repens*

As might be deduced from the name, this species is even smaller then Low Oregon grape. It is the species encountered in Montana and the dry interior Northwest. The roots may be potent medicinally, but since they are relatively small, and relatively hard to dig, considering they are often found in rocky or hard dry soils, it is unlikely this species will ever be big in the trade. Although for herbalists living where it grows, it is a great choice, since they can dig it personally and use it fresh.

Pedicularis spp.

Worldwide there are over 350 species. *Flora of the Northwest* lists 14 species. *Pedicularis* species are used medicinally by indigenous peoples in both the old world and the new world. They have currently a small place in western herbalism.

Betony, *Pedicularis racemosa,* Elephant-head, *P. groenlandica*

There is a small demand for these subalpine species. The roots I have dug are not very big. The price would have to be high to warrant cultivation.

Pipsissewa, Prince's Pine, *Chimaphila umbellata*

Worldwide there are 7 species. Our one native specie ranges over much of North America, primarily in dryish, well-drained soils in forest understories.
Sustainability category D to E. In some forests they are a conspicuous element of the low groundstory, but in many others they are scattered. The more abundant they are locally, the larger amount could be harvested sustainably. This plant has a reputation for being overharvested for the soda pop industry, notably pepsi-cola. Reputedly, semi-trailer truckloads are shipped out of the Gifford-Pinchot National Forest in southwest Washington. Thus far I have only harvested by taking the first whorl of the plant (the one-year old section). A small pruning which leaves the plant to continue growing. I take the top whorls from only about 5% of the plants in the stands I do enter. Some localities have good stands and can sustain an annual harvest. Do not harvest where it is not in abundance.
Propagation: The seed of pipsissewa is the smallest seed of any plant I've ever collected! Must be zillions to the pound. I suppose surface sowing on top of the right sort of humus with the right sort of symbiotic fungi could work, but certainly not an easy species to propagate from seed. It is easier to do division of the underground stems or take stem cuttings during the summer and root them in a sand and peat medium.

Pennyroyal, *Mentha pulegium.*

Pennyroyal is helpful for many women and so has an already substantial market and bigger potential. Worth considering for cultivation or establishing semi-wild patches.

Polypodium

Worldwide there are about 75 species. *Flora of the Northwest* lists 3 native species.

Licorice Fern, *Polypodium glycyrrhiza*

A pleasant trailside nibble enjoyed by most children and some adults. Native people utilized it as an energy food on long treks. It contains constituents similar to licorice root, so it may be useful for various blood sugar disorders. It is primarily used in cough medicines.

Sustainability category D. Harvesting should only remove a small percentage (less then 5%) of the rhizomes. In good conditions it forms extensive colonies on tree trunks (primarily bigleaf maple) and on rock faces. I pull off handfuls of the rhizomes from small patches (never more than 12" across), so that the adjacent rhizomes can easily recolonize the small bared patches.
Culitvation potential. Currently low. There is little demand and it currently doesn't have a reputation as a strong medicinal. However, it may become more popular in the future.
Propagation. It is easy to transplant the rhizomes. Try to retain as much of its associates (mosses, lichens, soil, microbes, etc) as possible and attach to your shaded rock walls, stumps or suitable substrates.

Puget Sound Mugwort, Suksdorf's Mugwort, *Artemesia suksdorfii*

A strongly aromatic mugwort native to Puget Sound. Most of it lives within sight of the ocean including right in the salt-spray zone; but colonies can also be found some miles inland, on bluffs or along roads. A number of herbalists I've talked to (and myself) believe this is one of the best mugwort species for medicinal use.
Sustainability category E.
Cultivation potential. Low at this time. At this point we do not see it offered commercially (at least under this name), but it would be a good herb to cultivate if it gains popularity.

Rose ,

Worldwide there are about 100 *Rosa* species. *Flora of the Northwest* lists 6 native species.

Woods Rose, *Rosa woodsii*
Nootka rose, *Rosa nutkana*

Sustainability category C. Harvesting rosehips does little damage to the resource, other than reducing seed and wildlife food. It is hard to imagine making more than a dent in the natural supply.
Culitvation potential. There is a huge world demand for rosehips. Most of it comes from eastern Europe, where their low labor costs make it unprofitable for us to commercially compete with their dried rosehips. There is also a market for the unopened rose blossoms, but again, the commercial price is relatively low. However, the price for native rose seed is high enough to warrant collecting for the seed trade or even planting it out in restoration plantings with an eye to seed production.

Spikenard, Sarsparilla, *Aralia* spp.

Worldwide there are 11 species. *Flora of the Northwest* lists only 1 species as native, although *A. californica* (California Spikenard) is at our southern boundary. *A. racemosa* from the eastern US "encourages sweating, and is stimulant and detoxifying. It is taken for rheumatism, asthma, and coughs. Applied externally as a poultice, American spikenard is used to treat a number of different skin conditions, including eczema." Andrew Chevallier in *The Encyclopedia of Medicinal Plants.*

Sarsparilla, *Aralia nudicaulis*

One of our few native members of the ginseng (Araliaceaea) family. Native from eastern BC and northeast Washington to Montana, south to Colorado, and east to eastern Canada and the Atlantic states. The pleasantly flavored rhizomes were traditionally used as one of the flavorings in root beers. It makes a pleasant tea with diaphoretic, diuretic and stimulant properties.
Sustainability category D. Moist, humus-rich forests provide its habitats. We do not see it much west of northeast Washington and adjacent BC. Where it is abundant, a sustainable harvest is possible by using pulaskis to dig up sections of the shallow underground rhizomes. Where it is not abundant, do not harvest, but instead move some rhizomes around to expand the patches or start new ones.
Culitvation potential. Currently low. There is not much in the marketplace and it currently doesn't have a reputation as a strong medicinal. It may become more popular in the future.
Propagation. From seed or by divisions of the rhizomes.

Sweetroot, *Osmorhiza* spp.

Worldwide there are 11 species. *Flora of the Northwest* lists 4 species.

Sweetroot, *Osmorhiza occidentalis*

A plant of the wet subalpine meadows in the Cascades. One of my favorite native medicinals. Here in the North Cascades where I collect it is at the northern edge of its natural range, which is from northwest Washington to sw Alberta and south to California and Colorado. A favorite plant of the Native Americans. It was a good luck charm, breath freshener and was rubbed on bows and hunters to disguise their scent. It was a sweet treat for children and adults. And it was a valued medicine.
Sustainability category D. Since it is mainly a subalpine plant, there are limited areas to collect.
Culitvation potential. A large potential. There is not much in the marketplace, but I believe there will be. Also useful for flavoring liqueurs and to mix with bad-tasting herbs to make them more palatable.
Propagation. From seed or by divisions of the rhizomes.

Skullcap, Scutellaria lateriflora

Sustainability category E. I have never found this in much abundance yet, but I keep my eyes open for it in moist habitats.
Cultivation Potential. High. There is a sizable and growing market. Almost all of it is met from cultivated plants. Question is, how many other people have crops already in and how soon will there be overproduction? Time will tell.
Propagation. From seed. Or planting out the root runners. They only tend to grow well for the first two years and then peter out. So stands need renewing every two or three years. The tops can be clipped once or twice a year. See my more extensive article on skullcap for details.

Usnea, *Usnea* spp.

Usnea wirthii is the species I am most familiar with and have collected the most. It is a small to moderate sized member of the genus.
Usnea longissima. The largest usnea and the longest lichen in the world. Strands up to 16 feet long have been recorded. It is predominantly an element in old-growth forests and we just don't have much left. I know of very few places to harvest. We should be actively helping it increase in abundance again.
Usnea lapponica. A widespread and abundant species in the mountains from montane to subalpine evleations. Moderate sized, more like handful size.
Usnea hirta. A boreal forest species. Their tiny tufts are small little fingertip size.
Usnea alpina. Reaches the Northwest in the Rocky Mountains of Montana. Medium size.
Usnea scabrata subsp. *nylanderiana.* Its range includes along the west coast south of Vancouver Island.
There are other species in Oregon and California.
Cultivation Potential. There is a growing demand for usnea. Current stands should be well managed where harvesting is allowed. I hesitate to inoculate natural forests where other lichen species already have the niches filled up. Perhaps they could be integrated into agroforestry and tree crops plantings.
Propagation. It can be propagated by grinding up lichens, mixing them with a sticking agent and inoculating where you wish it to grow. The BC provincial forestry dept is experimenting with "hydroseeding" it up into tree canopies via high pressure hoses. I have seen *U. wirthii* common on fence posts, barn sides, rooftops, etc.

Valerian, *Valeriana*

Worldwide there are about 200 species. *Flora of the Northwest* lists 7 native *Valeriana* species. *V. sitchensis* is the only one I've seen in commerce. Michael Moore mentions three species. *V. sitchensis, V. dioica* and *V. capitata.* The last of which is not listed as a native Northwest species.

Sitka Valerian, *Valeriana sitchensis*

A plant of the wet subalpine meadows in the Cascades. Anecdotal and local experience indicate that this native valerian may be stronger then the widely used European *V. officinalis.*

Sustainability category D.

Cultivation potential: There is already a small demand for this root and many buyers would prefer from a cultivated source. To my knowledge, no one is growing Sitka valerian commercially yet. They are not as fast growing as *V. officinalis* and the yields will be lower. Obviously a premium price would be required to justify this.

Propagation. From seed, and you have to do it right. Or from dividing up the rhizomes. Rhizome division should give good results.

Western Red Cedar, *Thuja occidentalis*

Strongly antifungal and antibacterial. Not for extended use for those with kidney weakness and not during pregnancy. The essential oil is toxic.

Sustainability category C.

Cultivation Potential. There is so much available in the wild and the demand is so small that plantings specifically for medicinal uses would not be justified, although there are other valid reasons to plant it.

Wild Licorice, *Glycyrrhiza lepidota*

Ranges from BC to Ont and Minn and south to Cal, Ariz, NM and Texas. Licorice root is probably the most commonly used herb in Chinese Medicine. The European species is also much used. Our *G. lepidota* is not as sweet as the Eurasian species, but ours undoubtedly also has many medicinal constituents as it is mentioned in many tribal ethnobotanies.

Yarrow, *Achillea millefolium*

Worldwide there are 60 to 100 species. Our one native, *A. millefolium,* is found throughout the United States except for some parts of the Southwest. It is found from low to high elevations and in an amazing variety of habitats with the exception of deep forests. A commonly known and much used herb in the north temperate regions of the world.

Sustainability category C. It would be hard to overharvest except perhaps in specific patches.

Propagation. Easy from root divisions. Seeds can be sown indoors in late winter and transplanted later; or sown outdoors in late April.

Yerba Buena, *Satureja douglasii.*

Worldwide there are 30 species. *S. douglasii* is the only Northwest native species. It is worth cultivating this mint-family herb for its delicious smell alone. A delicate little plant tending to go unnoticed, unless you notice the fragrance from stepping on it's trailing runners.

Cultivation potential: Low. It would be hard to imagine getting much "tonnage" per acre from this diminutive plant. Yerba Buena would be a good species to encourage in restoration. Skid roads and disturbed areas would be likely places to throw the seeds.

Propagation. Seeds or division of the runners.

Oregon Grape status on United Plant Savers lists

6/7/98 response to Richo Cech's letter of 5/28/98.

Looking at the *Mahonia* question. How much Oregon Grape is being harvested? From what areas? From what species? I agree that we should endeavor to track where this demand is being met from and whether it is being done sustainably and we should look at all *Mahonia* species.

Regarding my suggestion that perhaps *Mahonia aquifolium* should be on the "To Watch" list and *M. nervosa* should not. This suggestion is for Washington State only. I do not know the situation that well in southwest Oregon and you know much better if *Mahonia nervosa* is in danger in your area or in California.

How can UpS set up a system which details which portions of a particular species range warrant "At Risk" designation and which deserves "To Watch" designation. Furthermore how big/ small an area should we get down to? For instance take the case of *Mahonia aquifolium* in the North Cascades. It is abundant in Chelan County and could accomodate a sizable harvest level if done sustainably, but in the adjacent Okanogan county it is less abundant and it would make sense to put on the "Too Watch" list.

Actually county isn't even small enough a scale. Today I met a stand of *M. nervosa* on a ridge about 5,500' elevation in Chelan county. Nearby were also *M. aquifolium* which is found at greater abundance in the drier lower elevations of the mountains. I was at the cusp of the *M. nervosa* species where there was just enough moisture for it to survive. Harvesting *M. nervosa* at this dryland boundary could contract its range. *M. nervosa* should not be harvested at these dryland "edges" of its habitat range, even though there are abundant stands in wetter portions of the county.

I appreciate people's valid concerns for their local populations, but please appreciate that local scarcity in your area does not translate to an equal scarcity in all parts of a plant specie's range. I urge all United Plant Savers (UpS) members to operate from a point of heartfelt concern as well as a from a position of informed knowledge. I cannot personally know the situation of a plant's rarity/abundance throughout its range, but I can know it within the area in which I live and operate. I need to communicate with UPS members and knowledgeable botanists to know the situation in other areas. I urge you to apply my categories of rarity/abundance for the plants in your area (or make up your own categories) and let me know what the situation is in your area.