Woody Plants for Revegetating Fire Areas

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This list is specifically for the area around Mink Creek and Gibson Jack areas of Pocatello which experienced the devastating fire of 2012. This list can be used for similar areas as long as differences in average precipitation are taken into consideration.

This is a list of woody plants (trees and shrubs) which are suitable for planting as replacements for the acres of Utah Juniper trees which burned in the fire. Most of the recommended plants are deciduous or broadleaved trees and shrubs as these species are much less flammable and can even stop or slow down a fire. In addition they will usually sprout back from fire or other damage.

The plants on this list are ones which will grow well or reasonably well with no irrigation after establishment. This area receives about 15 to 16 inches of annual precipitation and the soils vary from gravelly to silt loam. Some of the trees and shrubs on this list will benefit from an occasional deep watering. Others will reach tree size with regular irrigation but remain as shrubs with no irrigation. The most highly recommended plants on this list will grow normally on just the natural precipitation of the area.

There are many native and non-native trees and shrubs that could be added to this list but many of them are difficult to obtain for planting. Those included on this list are reasonably available.

Definition of native: I will use three classifications for "native" plants. The term "local native" refers to plants native to northern Bannock County. The term "native" I use for those plants found naturally within 100 miles or so of Pocatello. The term "regional native" I use for plants found generally in states surrounding Idaho or nearby such as Colorado etc. The term "non-native" refers to plants from other continents or from areas in North America far outside this region.

Although most of the plants listed below do not resemble the native Utah Junipers or "cedars" that burned, they can be used to eventually form a moderately dense woody plant community that is attractive but much more fire safe.

Preferred List

Oak Leaf Sumac *Rhus trilobata* Also known as Squawbush and by other names, this locally native shrub is found near City Creek and in dry areas along Buckskin Road just up from Franklin Middle School. It always forms a dense, rounded mound. In the driest soils it may only grow 3 feet high by 5-6 feet wide but may double that size if soil moisture is a little better.

Gambels Oak *Quercus gambelii* Also known as Scrub Oak, this is the closest native oak species and is found as far north as northern Utah within a few miles of the Idaho border. This is a suckering large shrub or small tree which grows very well as a cultivated tree at numerous locations around Pocatello. With this plant you will have numerous stems that form a thicket. Some places where it is native are drier than the burn site so it should grow reasonably well without irrigation. Usually available as seedlings or small container plants but you can also collect acorns off of cultivated Gambels Oak in Pocatello and they are easy to grow.

Curl Leaf Mountain Mahogany *Cercocarpus ledifolius* This is a local native found right near the burn area above Gibson Jack Creek. It is a broadleaf shrub or small tree but it retains leaves through winter so it is technically evergreen. This is probably the best species to plant for green foliage in winter without the fire hazard of junipers. The only disadvantages to this plant are that it does not usually resprout after fire and it is frequently browsed by deer although rarely browsed so severely it dies.

Mountain Mahogany *Cercocarpus montanus* This is a deciduous species of Mountain Mahogany that is native to many areas surounding Idaho but does make it into the southeast corner of the state in Franklin and perhaps Bear Lake

counties. The leaves are very different looking from Curl Leaf Mountain Mahogany and they normally are deciduous. This should grow well in the precipitation zone of the burn site and it is reasonably available commercially. Unlike Curl Leaf Mountain Mahogany, this species often resprouts from fire or other damage.

Utah Serviceberry *Amelanchier utahensis* This large shrub or small tree is native to many areas of Idaho although I have not seen it in northern Bannock County. It often grows with Mountain Mahogany in fairly dry areas including areas that are drier than the burn site. Utah Serviceberry is more drought tolerant than the other native serviceberry. It is available commercially although sometimes hard to find.

Fern Bush *Chamaebatiaria millefolium* This native shrub is more of a small to medium sized shrub that is most often found growing out of basalt or lava including the lava flows between Blackfoot and Idaho Falls. It has very ferny looking aromatic leaves and white flowers in mid-summer. It is available commercially as small plants. Fern Bush is definitely one of the more interesting native plants to add to a landscape.

Silver Buffaloberry *Shepherdia argentea* This gray leaved large shrub or small tree very much looks like the related Russian Olive ,however, Buffaloberry is native. There is some controversy as to whether it is actually native in Idaho but at any rate it is native to all the states that surround Idaho. This plant is usually found in somewhat moister areas than the burn site although it will grow on drier soils without irrigation, just as a smaller, shrubbier plant. It is an excellent substitute for Russian Olive which is not native and is quite aggressive. Buffaloberry is more of a suckering plant than Russian Olive.

Bitterbrush *Purshia tridentata* This is a common local native at the burn site. To some it resembles sagebrush but with green leaves. Bitterbrush has honey scented yellow flowers in late spring. In some ways this may be a more desirable plant than sagebrush or certainly a good plant to mix with it. Bitterbrush is almost never available in retail nurseries but often available from seedling growers. Bitterbrush sometimes resprouts after fires but not always.

Cliffrose *Purshia mexicana or Cowania stansburiana* This is a close relative of Bitterbrush and sometimes forms natural hybrids with it in the wild. Cliffrose differs from Bitterbrush in having white instead of yellow flowers and in keeping its green leaves all winter. Some references list Cliffrose as native to Idaho but I have never seen it here. At any rate, it is native just a few miles south of the Idaho border in both Utah and Nevada and certainly qualifies as a native plant. Cliffrose is occasionally grown by native plant growers but is not always easy to find.

Apache Plume *Fallugia paradoxa* This medium sized shrub is related to Mountain Mahogany, Cliffrose and Bitterbrush. It is found from central Utah south and qualifies as a regional native. Apache Plume is named for the pinkish colored tails on the seeds which follow the white flowers in summer. This shrub could be used as a showier alternative to sagebrush or mixed with sagebrush and other shrubs for a more interesting planting. It is one of most drought tolerant of the showy plants listed here.

Purple Sage *Salvia doorii* This small shrub is not related to sagebrush but rather to the garden sage used as a cooking herb. Purple sage is native to western Idaho and south throughout the Great Basin. It is a showy small gray leaved shrub with attractive purple flowers. Purple Sage is frequently available from native plant growers.

Little Leaf Mountain Mahogany *Cercocarpus intricatus* This is a smaller version of the Curl Leaf Mountain Mahogany usually only growing 3 to 5 feet tall. It also grows in drier areas than other Mountain Mahoganies. Although not officially listed as native to Idaho, I have seen it in Weston Canyon near Preston. It is "officially" native just a few miles south of the Idaho border in Utah. Like Curl Leaf Mountain Mahogany, this species keeps its leaves year round. It is somewhat difficult to find for purchase.

Chokecherry *Prunus virginiana* This familiar local native is usually found growing in somewhat moister areas although it can be found growing in dry areas as a shrub. If planted in drier soils it will survive and grow as a 3 to 5 foot tall suckering shrub. With more moisture it can easily reach 15 to 20 feet or even 30 feet tall. In drier areas Chokecherry will likely need a little supplemental water the first year or two to become established.

Bigtooth Maple *Acer grandidentatum* This is the local native maple that turns canyons red and orange in fall. It is native to slightly moister areas than most of the burn site but should survive even in dry areas as a shrub. At the driest sites in Bigtooth Maple stands on gravelly soils the plants are only 5 to 7 foot tall shrubs but in canyon bottoms with deeper soil they may grow 30 feet tall. This tree is fairly easy to purchase in different sizes. Note: some persons mistakenly call this species Rocky Mountain Maple which is a different species.

Sagebrush and Rabbitbrush

Sagebrush and Rabbitbrush are the two most common groups of native shrubs. They will eventually appear after burns whether planted or not. Most sagebrush species do not resprout after fires whereas rabbitbrush species almost always do. If you want to include the various sagebrush and rabbitbrush species in your plantings the different species are listed below. If you want sagebrush but don't want it so tall, Mountain, Black and Three Tip Sagebrush are all lower growing.

Big Sagebrush *Artemesia tridentata*
Wyoming Big Sagebrush *Artemesia tridentata wyomingensis*
Mountain Sagebrush *Artemesia tridentata vaseyana*
Black Sagebrush *Artemesia nova*
Three tip Sagebrush *Artemesia tripartida*
Rubber Rabbitbrush *Ericameria nauseosus*
Green Rabbitbrush *Chrysothamnus viscidiflorus*
Fourwing Saltbush *Atriplex canescens* is another local native that looks somewhat like sagebrush and is available for planting.

Second Preferred List

These trees and shrubs are also good to consider but did not make the preferred list either because they may do better with just a little more moisture than the driest areas receive or because they have limited availability.

Golden Currant *Ribes aureum* This is a very familiar local native shrub and would make the preferred list except that it grows somewhat better in slightly moister areas. It will grow just fine in dry areas but the leaves will color and fall off early, like in August. The colorful flowers and edible fruits make it highly desirable especially if it gets an occasional bit of extra water.

Squaw Currant *Ribes cereum* This local native is found on gravelly soils and rock outcrops and would make the preferred list except that it is not often sold. It is a small to medium shrub.

Saskatoon Serviceberry *Amelanchier alnifolia* This local native large shrub or small tree would certainly make the preferred list except for the fact that it is so variable and you don't know what you are getting when you buy it. Over it's vast native range this plant is highly variable and the different varieties grow in many different habitats. Locally we have at least two variations of Saskatoon Serviceberry. One is an upright but oval shaped, many branched shrub with smaller, rounder leaves that grows in moderately dry areas including right near the burn site. The other local variant has larger leaves, is sort of a crooked tree that usually grows in the understory of moist forests. Obviously the best to plant would be the variant from drier areas but when you purchase a Saskatoon Serviceberry from a nursery you have no idea where it came from. All variations are at least moderately drought tolerant and would do well with even 2 or 3 deep waterings a year. Another alternative would be to gather seed from serviceberries in dry areas and plant those.

Mountain Snowberry *Symphoricarpos oreophilus* This local native small to medium shrub is common on or near the burn site but is almost never sold. Other snowberry species such as *Symphoricarpos alba* are easier to find for sale but they are not quite as drought tolerant. Mountain Snowberry is a great plant if you can find a source for it.

Smooth Sumac *Rhus glabra* This shrub is fairly familiar as a landscape plant but is also native to southeast Idaho near Malad and also to western Idaho. The Rocky Mountain variety of Smooth Sumac is often called variety *cismontana*.

Smooth Sumac sources from the central and eastern United States may not be as drought tolerant as native sources. If you can find variety *cismontana* or another western seed source then this plant moves up to the preferred list.

Little Leaf Mock Orange *Philadelphus microphylla* This is a species related to our state flower the Syringa or Mock Orange. It is a smaller, tidier plant and more drought tolerant. It is native from northern Utah on south. The fragrant white flowers are quite attractive.

Net Leaf Hackberry *Celtis reticulata* This is a local native shrubby tree found just a couple miles from the burn site at the Portneuf Gap. It certainly would make the preferred list except that it is hardly ever sold. If available this is a highly desirable plant. It grows much like Gambels Oak, being a suckering shrub on dry gravelly soils or a 20 to 30 foot tree on better soils with some moisture.

Oak Hybrids *Quercus* Many oaks hybridize naturally in the wild. Such hybrids usually are more vigorous and combine the best traits of each parent. The best hybrids for this area would be those of regional native species. Any combination of Gambels Oak, Shrub Live Oak and Bur Oak would make excellent plants for revegetating burn areas. Bur – Gambels hybrid Oak is the most likely to be available. Gambels – Shrub Live Oak hybrids are often called *Quercus undulata*. And Bur – Shrub Live Oak hybrid is a man-made cross that would have excellent potential.

New Mexico Olive *Forestiera neomexicana* This is a large shrub or small tree native from east central Utah and southward. It is fairly drought tolerant though it will remain smaller with no irrigation. The few than have been planted in Pocatello have grown very well. It is available from some native plant growers.

Creeping Oregon Grape *Mahonia repens or Berberis repens* This is a common locally native short shrubby groundcover. It is commonly available and easy to grow but on the driest areas it may need a bit of supplemental water to do very well. Two or three deep waterings a year would be sufficient although it likely will survive on what falls out of the sky.

Yucca species *Yucca* Several yucca species are grown in local yards the most common being *Yucca flaccida* and *Yucca filamentosa*. Those two species would be considered non-natives as they are from the central and eastern states. *Yucca glauca* is planted here sometimes and it would be considered a regional native as it grows throughout all the plains states into central Wyoming. Other yucca species are less often sold. All will grow well with little or no added water, even the eastern species.

Recommended plants that are best with some irrigation

The following plants will survive on the drier burn areas just on natural rainfall but they will be much smaller and less vigorous than if they were given some extra water 2 or 3 times a year. On the moister, deeper soils in the burn area these may well do just fine with no additional water.

Woods Rose *Rosa woodsii* This is the native wild rose right near the burn area. It has pink flowers for about 3 to 4 weeks in early summer. Wodds rose will survive in dry areas but is really better with slightly moister soil.

Common Hackberry *Celtis occidentalis* This potentially large tree is native to the eastern and central states as far west as eastern Colorado. It is fairly common as a shade tree in Pocatello and birds have spread the seeds to places where it grows on its own. Common Hackberry can grow with just natural rainfall as evidenced by some that are growing wild on the south side of Red Hill, however, those are shrubby 5 to 8 foot tall plants that are hardly trees. With some irrigation this will grow into a nice shade tree but it may be worth planting in dry areas just as a shrub.

Green Ash *Fraxinus pensylvanica* Over the decades this has probably been the most common intentionally planted shade tree in Pocatello. It is native to the eastern and central states but follows the Missouri River into western Montana almost to Yellowstone Park so it qualifies as a regional native. It will grow very large with irrigation but also will survive as a shrub or small shrubby tree with no added water. Don't expect anything over about 10 feet tall on dry soils but it can get 60 feet tall with regular irrigation.

Box Elder *Acer negundo* This is a common weedy tree throughout Pocatello. It is also a native tree along Johnny Creek, Mink Creek and other places. There are several subspecies or varieties and our local native western variety of Box Elder can be separated from others because it has only three leaflets while subspecies or varieties from other parts of the country have 5 to 7 leaflets. Both varieties grow freely as self-sown weedy trees throughout Pocatello. Box Elder is like Common Hackberry and Green Ash in that it will survive as a shrub in dry areas with no irrigation but it needs some additional water to grow into a tree.

Syringa or Mock Orange *Philadelphus lewisii* This native shrub is our state flower. It is found on what appear to be very dry areas such as Craters of the Moon but in fact those areas have considerable water that percolates down. Just how drought tolerant this plant is on regular soils without the moisture percolation I don't know. I would consider it somewhat of an experiment on the drier areas of the burn site without any water. It may well prove to be more drought tolerant than I suspect.

Bur Oak *Quercus macrocarpa* This is probably the most commonly planted oak in Pocatello and might also be considered a regional native as it grows as far west as eastern Wyoming and eastern Montana. Without any irrigation it will likely remain shrubby and below 10 feet but with some added moisture it becomes a shade tree.

Non-Native Species

Non-native species are those from outside the western United States. There are many well adapted non-native species which would be effective at revegetating the burned areas. There is a misconception that native plants are the best adapted to a given area. That idea is not always true as sometimes non-native plants are much better adapted than natives. And therein lies one of the main problems with some non-natives, they can out-compete native plants in an undesirable way. Not all non-natives are aggressive, many are well behaved. Some non-natives may be aggressive in some habitats and not aggressive in others. The decision to plant non-natives should be well thought out but you are not an immoral or unethical person if you decide to plant non-natives, sometimes they are the best plant for the job.

Siberian Pea *Caragana arborescens* Probably the most familiar non-native large shrub / small tree. There were many planted on burned properties before the fire and most seem to be sprouting back after the fire. In the driest areas with no irrigation this remains smaller, only 6 – 7 feet tall and never reseeds itself. On moister soils it will grow taller and seeds may germinate and survive. One place near City Creek that is a bit moister it has densely reseeded itself. This is a very tough and easy to grow plant with many uses. I would just be careful planting it near moderately moist soils where it may seed itself too much.

Russian Pea Shrub *Caragana frutex* This is a smaller plant than Siberian Pea and reaches a maximum of about 6 to 7 feet but will be less without irrigation. It is also a suckering shrub that will form small thickets. It is somewhat more drought tolerant than Siberian Pea so it would be better for the drier areas. The seeds rarely sprout. This plant may be hard to find although it is occasionally sold.

Little Leaf Pea Shrub *Caragana microphylla* This has similar leaves to Siberian Pea but they are smaller and grayer and the plant is about half the size and is also much more drought tolerant but is only occasionally available for purchase.

Pygmy Pea Shrub *Caragana pygmaea* This is the smallest of the pea shrub species and will only be 18 inches tall by 3 feet wide without irrigation to maybe 3 feet high by 6 feet wide if irrigated. It is also very drought tolerant. Pygmy Pea Shrub is sometimes sold at local nurseries but more likely to be found at wholesale seedling growers.

Peking or Hedge Cotoneaster *Cotoneaster lucidus* This is a very commonly planted medium to large shrub. It is easily available however it is only moderately drought tolerant and may have difficulty in the driest areas with no irrigation.

Honey Locust *Gleditsia triacanthos* This commonly planted tree that is native to the Midwest and eastern states may not be thought of as a drought tolerant plant capable of surviving with no irrigation yet a number of Honey Locust were planted in dry areas near Buckskin and American Road in the 1930s by CCC crews and survive to this day as 8-10 foot shrubs. If you wanted to plant Honey Locust in non-irrigated areas the best might be thornless seedlings in small sizes.

Weedy Non-Natives
These species are already found in abundance in this area, being completely naturalized. Both will grow without any irrigation on even the driest sites. Neither one is commonly sold at nurseries anymore so you may have difficulty finding them even if you wanted to intentionally plant them.

Siberian Elm *Ulmus pumila* This tree is often incorrectly called Chinese Elm. It is the most drought tolerant large growing tree that will grow in this climate. It is also a very weedy species spreading everywhere the wind blows the seeds. This tree will likely appear in many areas over the next few years whether it is planted intentionally or not. Siberian Elm is a delicious delicacy to deer which is the main reason it has not taken over the lower and mid elevation habitats in this area. Should you intentionally plant or want to keep this tree be aware that it will likely be seriously browsed by deer the first years. There is no question that Siberian Elm is extremely well adapted but that does not always make it the most desirable plant.

Russian Olive *Elaeagnus angustifolia* This well known gray leaved tree will grow anywhere without irrigation. However it is along waterways and in areas with a high water table that it truly becomes weedy. It has been declared a noxious weed in several neighboring states and may be in the future in Idaho as well. It is not very weedy in dry areas and only reaches shrub size there without irrigation. However, the fruits are eaten by birds which then drop the seeds anywhere including moister areas where it can become weedy. There is no question that this tree is very well adapted to revegetating the burn areas but that does not necessarily make it a desirable selection. Unlike Siberian Elm, Russian Olive is very resistant to browsing by deer.

Conifers (Evergreens)
Many will be hesitant to plant any conifers or evergreens because one of the main reasons the fire spread so fast was the Utah Junipers or "cedars" which went up like fireballs due to the high content of resins and oils in the foliage. Almost all conifers have some resins or volatile oils in the foliage or needles however most are not as flammable as the Utah Juniper. Conifers can be safely planted if they are 50 feet or more away from buildings and if they are solitary or in small groupings surrounded by deciduous plants that will not carry a fire. Conifers (evergreens) can be valuable for providing green through the winter and can be planted in a way so as not to be a fire hazard.

Utah Juniper *Juniperus osteosperma* This tree, often mistakenly called "cedar" was the tree that burned so readily in the fire. So why would anyone want to plant it again? Well, in small numbers, planted as described above it would not be a fire hazard. Also some persons may want to replant what they feel is the native tree that belongs there. Utah Juniper is not easy to purchase and is normally only available as small seedlings. Rocky Mountain Juniper is also native to the immediate area and is much easier to find for purchase.

Rocky Mountain Juniper *Juniperus scopulorum* This local native tree is more often found slightly higher in elevation than Utah Juniper and they are easy to tell apart because Rocky Mountain Juniper is almost always bluish-gray in color. Both Junipers do grow together on basalt or lava flows and in other places. Rocky Mountain Juniper will grow well even in drier areas without any additional water after establishment. It is commonly available commercially both as selected varieties in all sizes and also as small inexpensive seedlings. This species also grows much faster than Utah Juniper. There is a mistaken notion that the selected varieties are not as tough as seedlings. This is simply not true as the named varieties like 'Skyrocket' , 'Moonglow' , 'Wichita Blue' and others will grow without any irrigation or care just as well as seedlings.

Other Junipers Almost any juniper will grow even in dry areas without irrigation after it is established. This includes everything from flat growing ground cover junipers through larger shrubs and up to tree sized junipers.

Pinyon Pine *Pinus edulis and Pinus monophylla* Both the two leaf and single leaf species of pinyon pine will grow very well in the burn areas without any extra water. Both are native within 100 miles of Pocatello and there are large

examples of both species scattered throughout the city as cultivated plants. Neither is easy to find for purchase but both are worth the effort.

Ponderosa Pine *Pinus ponderosa* This large growing pine is native to Idaho and many places around the western states although not native right around Pocatello. Ponderosa Pine was planted in several areas of the Mink Creek drainage many decades ago and now reproduces on its own there. It will grow without irrigation even in dry areas once it is established although it will be slower growing and remain smaller. If possible, avoid pacific coast seed sources as they would be less adapted than Rocky Mountain seed sources.

Limber Pine *Pinus flexilis* This local native pine species is found on rock balds at Pebble Creek Ski Area, at Soda Springs and at Craters of the Moon. It grows in quite dry places with about the same precipitation as the burn area although at somewhat higher elevations. Limber Pine will likely grow with little or no irrigation once established even in dry areas. 'Vanderwolf' Limber Pine is commonly sold in area nurseries and it has a reputation for dying from too much water when planted in irrigated lawns. I do not know how 'Vanderwolf' Limber Pine would do without irrigation. I would suggest planting small Limber Pine seedlings which are available from seedling growers.

Sources for plants

Lawyer Nursery
6625 Montana Highway 200
Plains, Montana 59859
1-800-551-9875
lawyernursery.com
Lawyer nursery is primarily a wholesale nursery but they may sell to retail customers if the order is at least $250. They have many or most of the plants listed here available as small seedlings.

University of Idaho tree seedlings
seedlings.uidaho.com
small inexpensive seedlings of some of the plants listed here are available to the general public

Conservation Seeding and Restoration
506 Center Street West
Kimberly, Idaho 83341
208-423-4835
Sells seedlings of many of the above listed plants in small sizes and will ship or they can be picked up in Kimberly (near Twin Falls) Also does contract seeding and restoration.

Great Basin Natives
75 West 300 South
Holden, Utah 84636
(435-795-2303)
GreatBasinNatives.com
A mail order nursery that sells quite a few of the above recommended plants.

There are numerous other potential sources for these recommended plants. Many of them are wholesale growers that will sell only to retail nurseries. Many of these plants can be purchased through retail nurseries if they are given sufficient time to order them in. Most retail nurseries do not stock these plants in small sizes on a regular basis.