

WY PM TECHNICAL NOTE 17

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Boise, ID – Salt Lake City, UT – Spokane, WA

WY PLANT MATERIALS NO. 17

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PLANTS FOR POLLINATORS IN THE INTERMOUNTAIN WEST

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MONARCH BUTTERFLY ON A PURPLE CONEFLOWER

The purpose of this technical note is to provide information on perennial flowering species including forbs, legumes, shrubs and trees and the design and implementation of plantings to enhance habitat for floral visitors and pollinators including bees, wasps, butterflies, moths and hummingbirds.

PLANTS FOR POLLINATORS IN THE INTERMOUNTAIN WEST

Many of the world's crop species benefit from insect pollination mostly provided by bees. In North America, bees pollinate about \$14 billion dollars worth of crops annually. Up to one quarter of our diet comes from crops whose production benefits from pollinating bees.



Pollinators include bees, moths, flies, beetles, wasps, desert bats, hummingbirds, and butterflies. Many of these are critical to the function of terrestrial ecosystems because they enhance plant reproduction. Plants, both native and introduced species, provide food and cover for numerous wildlife species, help stabilize the soil and serve as buffers to improve water quality. As a group, pollinators are threatened world-wide by habitat loss, habitat fragmentation, pesticides, disease and parasites. This has serious economic implications for humans and for ecosystem diversity and stability.



The Natural Resources Conservation Service can assist landowners with habitat enhancement for pollinators by encouraging the establishment of an array of attractive plants that flower throughout the growing season. Plants, both herbaceous and woody species, that provide a source of nectar, food and cover habitat for adult and immature pollinators, will also provide habitat for a large array of other wildlife species.

Grasses, forbs, legumes, shrubs and trees planted along farm and ranch borders and within fields attract wildlife, including pollinators and other beneficial insects. The correct mix of plant species that bloom during most of the growing season will provide a continuous source of nectar and pollen needed by pollinators and other beneficial insects.

Annual plants can be useful tools in pollinator plantings because they produce tremendous amounts of flowers. However, annual crops can be very competitive with perennial plantings. Consequently, annuals should be considered for small odd areas and should not be mixed with perennial species. A few annual species that readily attract pollinators include buckwheat, canola, safflower, berseem clover, red clover, camolina, lentils, and dry peas.

Pollinator Friendly Plantings

- Reduce Pesticide Use – sequentially flowering annual and perennial plants provide forage and cover for predatory and parasitic insects that help control pest species; established plant communities resist weed invasion.
- Stabilize Soil and Provide Ground Cover – root systems and above ground vegetation hold soil in place, improve soil moisture infiltration, reduce the risk of erosion and serve as buffers which protects against surface water pollution. Legumes contribute nitrogen to the soil.
- Serve as Windbreaks and Shelterbelts – shrubs and trees protect farmsteads, feeding areas, crops and livestock from wind and dust damage. They also provide food, nesting and cover habitat for a great variety of wildlife, pollinators and other beneficial insects.

ESTABLISHING POLLINATOR FRIENDLY PLANTINGS

- **Start Right.** Most grasses and flowering forbs, including legumes can be started by direct seeding or in some cases by transplanting nursery seedlings. Flowering shrubs and trees are often best established by transplanting nursery seedlings.
- **Determine Soil Drainage and Other Soil Limitation Factors.** Most species will not do well in heavy, poorly drained or saline to sodic soils; select species that can perform well in the soils you have.
- **Match Plants with Similar Site Preferences.** Choose plants that share similar site, soil and water requirements and that are adapted to the local climate.
- **Water Wisely.** Tree and shrub plantings in the drier portions of the Intermountain West and Great Basin will require irrigation. For the best establishment biweekly watering the first 2 to 3 years is recommended. Once the plants are well established, watering less frequently, but for a longer duration to drive the moisture deeper into the soil will ensure that the plants develop their roots more fully ensuring long term survival.
- **Control Weeds.** Most plants do not compete well with weeds during establishment. Start with a weed free area or create one using appropriate herbicides or tillage equipment. Keep the area relatively weed free for the first 2 to 3 years of establishment. Mowing weeds during plant establishment will help suppress weed competition and encourage desired plants.
- **Protect Planting from Wildlife and Livestock.** Fencing to protect planting may be required in areas with abundant deer, antelope or elk or with livestock such as sheep, cattle or horses.
- **Plant Species.** Plantings should include at least one grass for interspace cover and one forb or legume or shrub adapted to the site from each of the three seasonal flowering categories; i.e. early, mid, and late. See Table 1 – note this is a partial list of species to consider for pollinator plantings. Additional species may be available or become available that were not considered for this technical note. Care was taken to list species that are commercially available.
- **Pollinator Habitat Plantings.** Plantings installed to improve pollinator habitat should remain ungrazed and undisturbed throughout the flowering season. This will ensure that flowers are available as a nectar source to adult pollinators. Bee larvae are fed pollen; those of other pollinating species may eat succulent foliage.
- **Maintenance.** Treatments such as haying or mowing may be required outside of the flowering period to remove plant litter that may affect plant health.
- **Planting Size.** For best results, plantings should be at least 0.5 acres in size.

FORB SPECIES	Preferred Cultivar	(MLRA) Major Land Resource Area	2010 Prices	PLS Per acre	Bloom period & bloom color	Seedling Vigor	Soil Texture
NATIVE							
American vetch	Common	IMW, NGP	\$	30	Early - Late spring	l	medium coarse
Arrowleaf Balsamroot	Common	IMW, NGP	\$	11	Early - Late spring	l	fine medium
Blue Flax, Lewis	Maple Grove	IMW, NGP	\$	4	Early - May June	h	medium coarse
Rocky Mtn Beepplant	Common	IMW, NGP	\$	15	Early - Late spring	h	medium coarse
Globemallow, Scarlet	Common	IMW, NGP	\$\$\$	2	Early - April and August	m	medium coarse
Penstemon, Rocky Mtn	Bandera	IMW, NGP	\$	1.5	Early Mid - May to June	h	medium coarse
Penstemon Fuzzy-Tongue	Old Works	IMW, NGP	\$	3	Early Mid - May June	h	medium coarse
Penstemon, Palmer's	Cedar (Utah native)	IMW	\$\$	2	Mid - May July	l	medium coarse
Northern sweetvetch	Timp	IMW, NGP	\$	4	Early - Mid May August	m	all
Prairie clover, purple	Bismarck Kaneb	IMW	\$	3	Mid - June to August	m	all
Purple coneflower, narrow leaved	Bismarck	NGP	\$	5	Mid - July to August	m	all
Prairie coneflower	Stillwater	IMW, NGP	\$	1.2	Mid Late - August Sept	m	all
Prairie clover, slender white	Antelope	IMW, NGP	\$	3	Mid Late - July August	m	medium coarse
Western yarrow	Eagle, Great Northern	IMW, NGP	\$	0.5	Mid Late - July to September	l	medium
Sunflower, Maximilian	Medicine Creek, Prairie Gold	IMW, NGP	\$	5	Mid Late - July to September	h	all
Dotted gayfeather	Common	IMW, NGP	\$\$\$\$.30	Mid Late - August Sept	l	medium coarse
Black eyed susan	Common	IMW, NGP	\$	1	Mid Late	m	fine medium
Blanket-flower, Gallardia	Common	IMW, NGP	\$	7	Mid July - Late Aug Sept	m	fine medium
Sulphur Buckwheat	Common	IMW, NGP	\$\$\$	5	Early - May June		

Pollinator habitat must be a minimum of 0.5 acre and 9 blooming species: 3 early, 3 mid and 3 late season and a mix of color each bloom season. Bloom period column also indicates species' typical bloom color. Trees/Shrubs can provide blossoms for the early season. (Refer to WY Plant Material Tech #17)

IMW - Intermountain West (MLRA 32.1 34A1,2,3 43B1,9 43B11,12 47.1 48A1 48B1 49 64.1) Western Wyoming

NRCS, WY

NGP - Northern Great Plains (MLRA 58B1,2,3 60B1 61.1 62.1 67A) Eastern Wyoming

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INTRODUCED SPECIES									
Blue Flax, Lewis	Appar	IMW, NGP	\$	4	Early – May June	h	medium coarse		
Cicer milkvetch	Monarch	IMW, NGP	\$	7	Mid Late – July August	l	all		
Sainfoin	Eski, Shoshone	IMW, NGP	\$	34	Early Mid Late - May to August	h	fine medium		
Sweet clover, yellow, white	Common	IMW, NGP	\$	4	Early Mid – Late spring	h	fine medium		
Alfalfa	Ladak, Ranger, Vernal	IMW, NGP	\$	5	Mid – June July	h	medium coarse		
Small burnett	Delar	IMW	\$	20	Mid	m	all		

Example seeding plan: 50- 80% forbs preferred with bunch grasses. Verify adapted grasses/forbs with Ecological Site Descriptions, add adapted forbs.

Species	Bloom period	Bloom color	PLS #/Acre*	% Mixture Forbs >50%	Total #/PLS/acre	Seed Price \$/#	Price for mix \$\$/acre
Wheatgrass, bluebunch			7	20.0	1.4	8	11.2
Wheatgrass, tall			10	10.0	1.0	3.5	3.5
Green needlegrass			6	5.0	0.3	3.0	.90
Big bluegrass, Sandberg			2	5.0	0.1	5.25	.53
Slender Wheatgrass, Pryor			6	10.0	0.6	1.35	.81
Globenallow, Scarlet	April August	Orange	2	2.5	0.05	178	8.9
Blue Flax	May June	Blue	3	5	.15	15	2.25
Penstemon, Palmer	May June	Pink	4	5	.20	21	4.2
Purple Prairie clover	June July August	Red/purple	3	10.0	0.3	16	4.8
Blanket flower	July August Sept	Yellow, red	7	10.0	0.7	22	15.4
Western yarrow	July Aug Sept	White	0.5	5	.025	24	.60
Maximilian sunflower	July Aug Sept	Yellow	0.5	5	0.1	40	4.0
Prairie coneflower	August September	Yellow/brown	1.2	5	0.06	28	1.68
Purple coneflower	July Sept	Pink/purple	9	2.5	.225	30	6.75
Totals				100 %			\$65.52/ac

References: NRCS WY (ID) Plant Material Tech Note #17 10/2008, NRCS ND Pollinators Fact Sheet, 10/2008, MT Biology Tech Note #20 3/2009

- Refer to WY Plant Material Technical Notice 3 for seeding rates and recommended cultivars and WY Plant Material Technical Notices 14 and 15 for seedbed preparation recommendations.

Pollinator habitat must be a minimum of 0.5 acre and 9 blooming species: 3 early, 3 mid and 3 late season and a mix of color each bloom season. Bloom period column also indicates species' typical bloom color. Trees/Shrubs can provide blossoms for the early season. (Refer to WY Plant Material Tech #17)

TABLE 1							
FLOWERING FORBS - LEGUMES	ORIGIN		GROWTH TYPE			BLOOM PERIOD	
PERENNIAL PLANTS							
PLANT NAME	NATIVE	INTRODUCED	FORB/LEGUME	SHRUB/TREE	EARLY	MID	LATE
ALFALFA		X	X		X	X	
ASTER, HAIRY GOLDEN	X		X			X	X
ASTER, SMOOTH	X		X			X	X
BEEBALM		X	X			X	X
BEEPLANT, ROCKY MOUNTAIN	X		X		X		
BLANKET-FLOWER		X	X			X	X
BURNET, SMALL		X	X			X	
BUTTERFLY BUSH		X	X		X	X	
CLOVER, ALSIKE		X	X		X		
CLOVER, WHITE (LADINO)		X	X			X	
CLOVER, WHITE DUTCH		X	X		X	X	
COLUMBINE	X		X		X		
CONEFLOWER	X		X			X	X
EVENING-PRIMROSE	X		X		X		
FLAX, BLUE		X	X		X	X	
FLAX, LEWIS	X		X		X	X	
GLOBEMALLOW SPECIES	X		X		X	X	
MILKVETCH, CICER		X	X				X
PENSTEMON, FIRECRACKER	X		X		X		
PENSTEMON, HOTROCK	X		X		X		
PENSTEMON, ROCKY MTN	X		X			X	
PENSTEMON, VENUS	X		X			X	
PRAIRIECLOVER, PURPLE		X	X			X	
PRAIRIECLOVER, WHITE		X	X			X	
SAINFOIN		X	X		X	X	
SUNFLOWER SPECIES	X		X			X	X
SWEETCLOVER, WHITE		X	X		X	X	
SWEETCLOVER, YELLOW		X	X		X	X	
SWEETVETCH, NORTHERN	X		X		X	X	
TREFOIL, BIRDSFOOT		X	X				X
YARROW, WESTERN	X		X			X	X

TABLE 1							
FLOWERING SHRUBS - TREES	ORIGIN		GROWTH TYPE		BLOOM PERIOD		
PERENNIAL PLANTS							
PLANT NAME	NATIVE	INTRODUCED	FORB/LEGUME	SHRUB/TREE	EARLY	MID	LATE
BITTERBRUSH, ANTELOPE	x			x	x		
BUFFALOBERRY, SILVER	x			x	x	x	
BUCKWHEAT, SNOW	x			x		x	x
BUCKWHEAT, SULPHURFLOWER	x			x		x	x
BUCKWHEAT, WHORLED	x			x		x	x
CHOKECHERRY	x			x	x		
CHERRY, NANKING		x		x	x		
CLEMATIS, WESTERN	x			x	x	x	
CURRENT, GOLDEN	x			x	x		
CINQUEFOIL, SHRUBBY	x			x	x	x	
CRABAPPLE		x		x	x		
DOGWOOD, RED-OSIER	x			x	x		
ELDERBERRY	x			x		x	
HAWTHORN, BLACK	x			x	x		
HONEYSUCKLE, TWINBERRY	x			x	x	x	
LILAC		x		x	x		
PEASHRUB, SIBERIAN		x		x	x	x	
PLUM, AMERICAN	x			x	x		
RABBITBRUSH, GREEN	x			x			x
RABBITBRUSH, RUBBER	x			x			x
ROSE, WOOD'S	x			x	x	x	
SAGE, PURPLE		x		x	x		
SAGE, RUSSIAN		x		x	x	x	
SANDCHERRY, WESTERN		x		x	x		
SERVICEBERRY	x			x	x		
SNOWBERRY	x			x		x	
SPIREA, DOUGLAS	x			x	x		
SUMAC, SKUNKBUSH	x			x	x		
WILLOW SPECIES	x	x		x	x		
YUCCA	x		x	x	x		

HABITAT CONSIDERATIONS

Habitat needs for pollinators are similar to other animal species: food, shelter, nesting sites and sometimes water. Shelter and nesting sites may be a limiting factor in your project area and should be considered during planning.

Nectar and pollen from flowering plants provide food for pollinators. Water needs can be met with birdbaths, fountains, ponds or puddles. Moist salt licks help provide mineral requirements for butterflies and sweat bees. Shelter and nesting habitat needs differ by pollinator species and include bare or partially vegetated, well drained soil; soil banks and cliffs, dead standing or fallen trees with beetle emergence holes, live trees, clumps of grass, live brush, tall grass, piles of leaves and sticks, wood piles, tree bark and rock crevices. See Table 2 for additional information.

Most native bees are solitary, nesting underground or above ground using beetle holes in dead-wood or dead pithy stems (e.g. elderberry, sumac or rose). Bumblebees are social with colonies of dozens to hundreds of workers. They typically nest in tree hollows or below-ground in old rodent burrows.



In pollinator plantings use of pesticides should be avoided, especially insecticides. Leave some areas untreated as refugial habitat for predatory and parasitic insects and pollinators that can recolonize treated areas.

TABLE 2 HABITAT REQUIREMENTS FOR GENERAL NATIVE POLLINATORS

Pollinators	Food	Shelter
Solitary bees	Nectar and pollen	Nest in bare and partially vegetated soils where water won't pond; or in beetle holes in deadwood, within pithy stems or twigs or construct nests of mud or leaf pulp
Bumblebees	Nectar and pollen	Nest cavity underground, often in old rodent burrows, hollow trees, underground or beneath clumps of grass
Butterflies and Moths	Nectar; nutrients, minerals and salts from rotting fruit, tree sap, clay deposits and mud puddles	Leaves and stems of larval host plants; also small woodpiles used by species that winter as adults
Bats (pollinators in the North American Southwest only)	Fruit, pollen, nectar, or insects	Tree branches, cavities, caves, rock crevices, under tree bark, under structures that provide overhang and artificial structures
Hummingbirds	Nectar and insects	Trees, shrubs, and vines

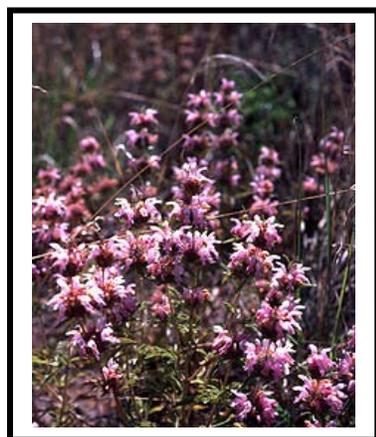
PLANTS FOR POLLINATORS



ALFALFA *Medicago sativa*
Origin: introduced legume
Mature Height: 2- 3 feet
Growth Rate: fast
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: cutter bees
Flowers: purple
Blooms: May – July (delay by cutting)
Broadcast Seeding Rate: 10 lbs/ac
In-row Spacing: N/A



ASTER *Aster species*
Origin: native forb
Mature Height: 0.5- 2 feet
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: excellent food and cover
Attracts: butterflies, bees
Flowers: creamy white to purple
Blooms: June - September
Broadcast Seeding Rate: 4 lbs/ac
In-row Spacing: 1- 2 feet



BEEBALM, WILD *Monarda fistulosa*
Origin: introduced forb
Mature Height: 1- 2 feet
Growth Rate: moderate
Growth Habit: upright, spreading
Wildlife Value: excellent forage
Attracts: butterflies, bees
Flowers: purple
Blooms: June - August
Broadcast Seeding Rate: 2 lbs/ac
In-row Spacing: 1- 2 feet



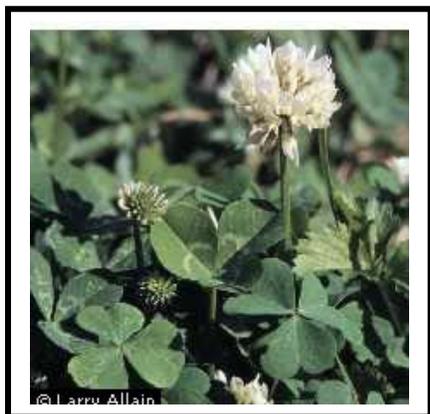
BLANKETFLOWER *Gaillardia aristata*
Origin: native forb - Great Plains
Mature Height: 1- 1.5 feet
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: excellent food and cover
Attracts: bees
Flowers: creamy white to purple
Blooms: July - September
Broadcast Seeding Rate: 16 lbs/ac
In-row Spacing: 1- 2 feet



BURNET, SMALL *Sanguisorba minor*
Origin: introduced forb
Mature Height: 1- 2.5 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: non-descript
Blooms: June - August
Broadcast Seeding Rate: 30 lbs/ac
In-row Spacing: 2- 3 feet



BUTTERFLY BUSH *Buddleja species*
Origin: introduced forb
Mature Height: 2- 4 feet
Growth Rate: moderate to rapid
Growth Habit: upright
Wildlife Value: excellent food and cover
Attracts: bees
Flowers: purple
Blooms: June - July
Broadcast Seeding Rate: establish w/ plants
In-row Spacing: 3- 4 feet



CLOVER species *Trifolium species*
Origin: introduced legume
Mature Height: 0.5 - 2 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: bees
Flowers: white to red
Blooms: April - June
Broadcast Seeding Rate: 12 lbs/ac
In-row Spacing: N/A



COLUMBINE *Aquilegia caerulea*
Origin: native forb
Mature Height: 1- 2 feet
Growth Rate: moderate to rapid
Growth Habit: upright
Wildlife Value: excellent food
Attracts: hummingbirds
Flowers: blue-white to yellow
Blooms: June - July
Broadcast Seeding Rate: 6 lbs/ac
In-row Spacing: 1- 3 feet



CONEFLOWER *Echinacea species*
Origin: native forb
Mature Height: 1.5 - 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: butterflies, many bees
Flowers: white to purple
Blooms: July - September
Broadcast Seeding Rate: 20 lbs/ac
In-row Spacing: 1- 2 feet



FLAX species *Linum species*
Origin: native and introduced forb
Mature Height: 1- 2 feet
Growth Rate: moderate to rapid
Growth Habit: upright
Wildlife Value: excellent food
Attracts: some bees
Flowers: white to deep blue
Blooms: May - July
Broadcast Seeding Rate: 8 lbs/ac
In-row Spacing: 1- 2 feet



GLOBEMALLOW *Sphaeralcea species*
Origin: native forb
Mature Height: 1.5 - 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: many bees
Flowers: orange to red
Blooms: April - June
Broadcast Seeding Rate: 4 lbs/ac
In-row Spacing: 2- 4 feet



MILKVETCH, CICER *Astragalus cicer*
Origin: introduced legume
Mature Height: 1- 3 feet
Growth Rate: moderate to rapid
Growth Habit: upright (lodges at maturity)
Wildlife Value: excellent forage
Attracts: bees
Flowers: white
Blooms: May - July
Broadcast Seeding Rate: 14 lbs/ac
In-row Spacing: N/A



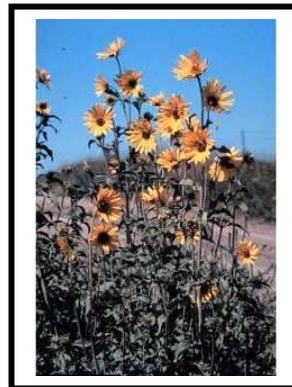
PENSTEMON *Penstemon species*
Origin: native forbs
Mature Height: 0.5 - 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: some bees, wasps, hummingbirds
Flowers: white – red - blue
Blooms: April – June
Broadcast Seeding Rate: 8 lbs/ac
In-row Spacing: 2- 3 feet



PRAIRIECLOVER *Dalea species*
Origin: native - Great Plains legume
Mature Height: 1- 2.5 feet
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: most bees
Flowers: white to purple
Blooms: June - August
Broadcast Seeding Rate: 14 lbs/ac
In-row Spacing: 1- 3 feet



SAINFOIN *Onobrychis viciifolia*
Origin: introduced legume
Mature Height: 2 - 5 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: excellent forage
Attracts: larger bees
Flowers: pink
Blooms: May – July (delay by cutting)
Broadcast Seeding Rate: 34 lbs/ac
In-row Spacing: N/A



SUNFLOWER *Helianthus species*
Origin: native and introduced forb
Mature Height: 2 - 5 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good winter food
Attracts: butterflies, many bees
Flowers: yellow to orange
Blooms: July – September
Broadcast Seeding Rate: 10 lbs/ac
In-row Spacing: 2- 4 feet



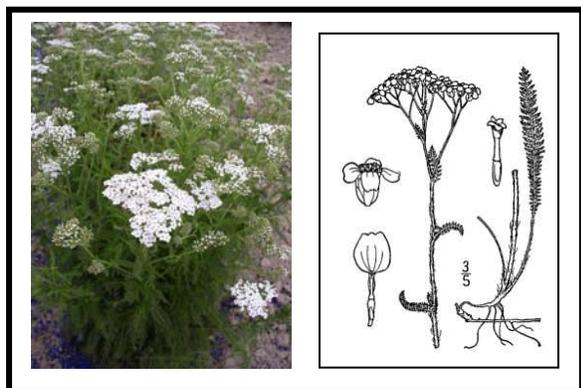
SWEETCLOVER *Melilotus species*

Origin: introduced legume
Mature Height: 1- 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: fair forage
Attracts: many bees
Flowers: white to yellow
Blooms: June – July
Broadcast Seeding Rate: 8 lbs/ac
In-row Spacing: N/A



TREFOIL, BIRDSFOOT *Lotus corniculatus*

Origin: introduced legume
Mature Height: 1.5 - 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good winter food
Attracts: bees
Flowers: yellow
Blooms: July – September
Broadcast Seeding Rate: 10 lbs/ac
In-row Spacing: N/A



YARROW, WESTERN *Achillea millefolium*

Origin: native forb
Mature Height: 0.5 – 1.5 feet
Growth Rate: rapid
Growth Habit: upright to prostrate
Wildlife Value: good forage
Attracts: butterflies, some bees
Flowers: white to yellow
Blooms: June - August
Broadcast Seeding Rate: 1.0 lbs/ac
In-row Spacing: N/A

PLANTS FOR POLLINATORS

SHRUBS AND TREES



BITTERBRUSH, ANTELOPE *Purshia tridentata*

Origin: native shrub
Mature Height: 2 - 6 feet
Growth Rate: moderate
Growth habit: upright shrub
Wildlife Value: cover, fall forage
Attracts: butterflies
Flowers: yellow
Bloom: May - June
In-row Spacing: 3- 5 feet



BUFFALOBERRY *Shepherdia argentea*

Origin: native shrub
Mature Height: 6- 20 feet
Growth Rate: moderate
Growth Habit: upright, suckering-spreading
Wildlife Value: browse; fruit red-orange
Attracts: butterflies, bees
Flowers: yellow-male; inconspicuous-female
Blooms: May - July
In-row Spacing: 8 -10 feet



BUCKWHEAT, Species *Eriogonum species*

Origin: native sub-shrub
Mature Height: 0.5 - 2 feet
Growth Rate: moderate
Growth habit: spreading open sub-shrub
Wildlife Value: cover, fall forage
Attracts: moths, butterflies, bees
Flowers: yellow to white
Bloom: July – September
In-row Spacing: 1- 3 feet



CHERRY, NANKING *Prunus tomentosa*

Origin: introduced shrub
Mature Height: 6- 10 feet
Growth Rate: moderate
Growth Habit: upright, semi-spreading
Wildlife Value: browse; fruit for song birds
Attracts: butterflies, bees
Flowers: small pink
Blooms: April – May
In-row Spacing: 6– 8 feet



CHOCKECHERRY *Prunus virginiana*
Origin: native shrub
Mature Height: 12- 25 feet
Growth Rate: moderate
Growth Habit: oval to round; suckering
Wildlife Value: excellent food and cover
Attracts: butterflies, bees
Flowers: creamy white
Blooms: April – May
In-row Spacing: 8- 12 feet



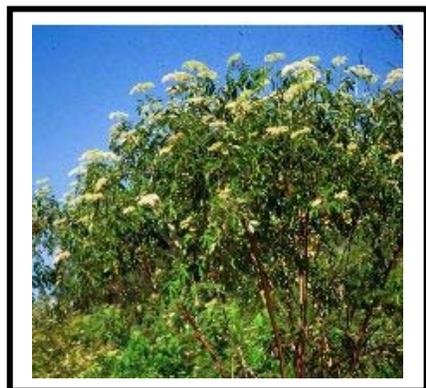
CLEMATIS *Clematis ligusticifolia*
Origin: native shrub
Mature Height: 1 foot
Growth Rate: moderate
Growth Habit: spreading and climbing vine
Wildlife Value: cover
Attracts: moths, bees
Flowers: white
Blooms: May - July
In-row Spacing: 2- 6 feet



CURRENT, GOLDEN *Ribes aureum*
Origin: native shrub
Mature Height: 5- 8 feet
Growth Rate: moderate
Growth Habit: spreading and upright
Wildlife Value: roosting, loafing, nesting
Attracts: early spring bees, bumblebees
Flowers: fragrant golden yellow
Bloom: April – May
In-row Spacing: 4– 6 feet



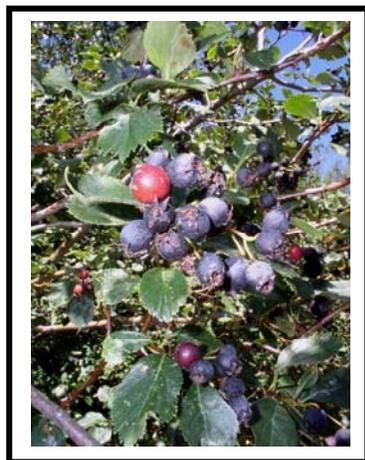
DOGWOOD, REDOSIER *Cornus sericea*
Origin: native shrub
Mature Height: 7- 10 feet
Growth Rate: rapid
Growth Habit: loose and round many stems
Wildlife Value: dense cover and browse
Attracts: butterflies, bees
Flowers: creamy white
Blooms: April - May
In-row Spacing: 6– 10 feet



ELDERBERRY *Sambucus cerulea*
Origin: native shrub
Mature Height: 6- 15 feet
Growth Rate: moderate
Growth Habit: upright, leggy
Wildlife Value: nesting, food
Attracts: butterflies, nesting bees
Flowers: white to cream
Blooms: June - July
In-row Spacing: 4- 6 feet



HONEYSUCKLE *Lonicera involucrata*
Origin: native shrub
Mature Height: 6- 10 feet
Growth Rate: moderate
Growth Habit: upright open shrub
Wildlife Value: fruit readily eaten, cover
Attracts: butterflies, bees, hummingbirds
Flowers: yellow
Bloom: April - July
In-row Spacing: 5- 8 feet



HAWTHORN, BLACK *Crataegus douglasii*
Origin: native shrub
Mature Height: 15- 12 feet
Growth Rate: slow
Growth Habit: upright
Wildlife Value: cover and food
Attracts: moths, bees, butterflies
Flowers: white
Blooms: May - June
In-row Spacing: 5- 10 feet



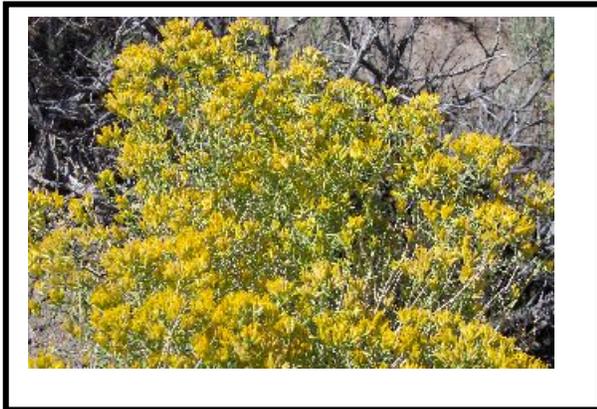
LILAC, COMMON *Syringa vulgaris*
Origin: introduced shrub
Mature Height: 6- 12 feet
Growth Rate: moderate
Growth Habit: upright, leggy, suckering
Wildlife Value: nesting
Attracts: early spring bees
Flowers: white to purple
Bloom: April - May
In-row Spacing: 5- 10 feet



PEASHRUB, SIBERIAN *Caragana spp*
Origin: introduced shrub
Mature Height: 6- 20 feet
Growth Rate: rapid
Growth Habit: erect oval shrub
Wildlife Value: nesting
Attracts: large bees (especially bumblebees)
Flowers: small showy yellow
Bloom: April - June
In-row Spacing: 5- 10 feet



PLUM, AMERICAN *Prunus americana*
Origin: native shrub
Mature Height: 8- 10 feet
Growth Rate: moderate
Growth Habit: round-headed crown, suckers
Wildlife Value: nesting, loafing, food, browse
Attracts: butterflies, bees
Flowers: white
Bloom: April – May
In-row Spacing: 6- 10 feet



RABBITBRUSH *Chrysothamnus species*
Origin: native shrub
Mature Height: 2- 6 feet
Growth Rate: moderate
Growth Habit: open spreading suckers
Wildlife Value: loafing, food, and browse
Attracts: butterflies, many small bees
Flowers: yellow
Bloom: August – October
In-row Spacing: 3- 6 feet



ROSE, WOODS *Rosa woodsii*
Origin: native shrub
Mature Height: 3- 6 feet
Growth Rate: moderate
Growth Habit: upright, semi-weeping,
Wildlife Value: nesting, cover and exc. food
Attracts: bees
Flowers: showy pink
Bloom: June – July
In-row Spacing: 3- 5 feet



SAGE, PURPLE *Salvia dorrii*
Origin: introduced half shrub
Mature Height: 1.5 – 2.5 feet
Growth Rate: moderate
Growth Habit: upright
Wildlife Value: fair
Attracts: many bees
Flowers: purple
Blooms: May - June
Spacing in row: 2- 3 feet



SAGE, RUSSIAN *Perovskia atriplicifolia*
Origin: introduced half shrub
Mature Height: 1- 3 feet
Growth Rate: rapid
Growth Habit: upright
Wildlife Value: good
Attracts: many bees
Flowers: purple
Blooms: June - July
Spacing in row: 3- 5 feet



SANDCHERRY, WESTERN *Prunus pumila*
Origin: native shrub
Mature Height: 3- 6 feet
Growth Rate: moderate
Growth Habit: open and spreading
Wildlife Value: loafing, food, browse
Attracts: butterflies, bees
Flowers: white
Bloom: April – May
In-row Spacing: 3- 6 feet



SERVICEBERRY *Amelanchier alnifolia*
Origin: native shrub
Mature Height: 6- 15 feet
Growth Rate: slow
Growth Habit: upright
Wildlife Value: good cover and food
Attracts: butterflies, bees
Flowers: white
Bloom: May - June
In-row Spacing: 5- 10 feet



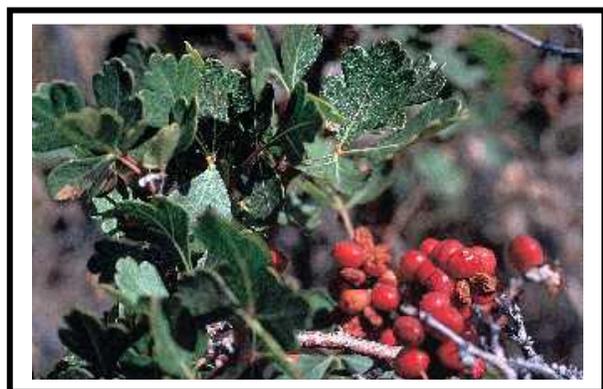
SNOWBERRY *Symphoricarpos species*

Origin: native shrub
Mature Height: 2- 3 feet
Growth Rate: moderate
Growth Habit: open and spreading
Wildlife Value: loafing, food, browse
Attracts: butterflies, bees, hummingbirds
Flowers: pink
Bloom: June – August
In-row Spacing: 3- 4 feet



SPIREA, DOUGLAS *Spirea douglasii*

Origin: native shrub
Mature Height: 4- 6 feet
Growth Rate: rapid
Growth Habit: thicket forming - upright
Wildlife Value: cover
Attracts: butterflies, bees
Flowers: rose - pink
Bloom: June
In-row Spacing: 2- 4 feet



SUMAC, SKUNKBUSH *Rhus trilobata*

Origin: native shrub
Mature Height: 6- 8 feet
Growth Rate: slow to moderate
Growth Habit: ascending, new branches hairy
Wildlife Value: browse, nesting, bird food
Attracts: early bees
Flower: light yellow
Blooms: May – June
In-row Spacing: 4- 6 feet



YUCCA *Yucca glauca*

Origin: native shrub – Great Plains
Mature Height 2- 4 feet
Growth Rate: slow
Growth Habit: upright
Wildlife Value: cover
Attracts: bats, moths
Flower: white
Blooms: June- July
In-row Spacing: 3 feet

PHOTO CREDITS

Butterfly on Coneflower – unknown
Bee – Jim Cane

Alfalfa – Patrick J. Alexander
Beebalm – W. L. Wagner
Burnet Small – Joe F. Duft
Clover species – Larry Allain
Columbine, Red – Tim Dring
Flax, Blue – Derek Tilley
Milkvetch, Cicer – Dan Ogle
Prairieclover – Gary Monroe
Sage, Louisiana – Larry Allain/N. L. Britton
Sweetclover - Patrick J. Alexander
Yarrow, Western – Dan Ogle/N. L. Britton

Bitterbrush – Gary Monroe
Buckwheat, Sulphurflower – Derek Tilley
Chokecherry – Gary Monroe/M. Williams
Currant, Golden – Gary Monroe
Elderberry – Ted Bodner
Honeysuckle – Emmet J. Judziewiez
Peashrub, Siberian – D. E. Herman
Rose, Woods – J. S. Peterson
Sage, Purple – Gary Monroe
Saltbush, Fourwing – Dan Ogle
Serviceberry – Margaret Williams
Spirea, Douglas – Clint Shock
Yucca (soapweed) - OPSU

Hummingbird – unknown
Bee Nest in Sumac Stem – Jim Cane

Aster – G. A. Cooper
Blanketflower – J. S. Peterson
Butterfly Bush – J. S. Peterson
Columbine – G. A. Cooper
Coneflower – Larry Allain
Globemallow – Al Schneider
Penstemon, Firecracker – Loren St. John
Sainfoin – unknown
Sunflower – Larry Allain
Trefoil, Birdsfoot – Robert H. Mohlenbrock

Buffaloberry - D. E. Herman
Cherry, Nanking – D. E. Herman
Clematis – Tim Dring
Dogwood, Redosier – D. E. Herman
Hawthorn, Black – Tim Dring
Lilac, Common – D. E. Herman
Plum, American – D. E. Herman
Rabbitbrush, Green – BLM
Sage, Russian – Gary Monroe
Sandcherry, Western – D. E. Herman
Snowberry – J. S. Peterson
Sumac, Skunkbush - D. E. Herman

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For additional information:

See USDA, NRCS, Idaho Plant Materials Technical Notes at:

http://www.id.nrcs.usda.gov/programs/tech_ref.html#TechNotes

Xerces Society, Invertebrate Conservation Fact Sheet, *Pollinators in Natural Areas; A Primer on Habitat Management*, 2007
www.xerces.org

NAPPC & Pollinator Partnership, *Selecting Plants for Pollinators; Guide for the Middle Rocky Mountain Steppe-Coniferous Forest-Alpine Meadow Province*. www.napcc.org www.pollinator.org

See "Native Pollinators", "Butterflies", "Bats", and "Ruby Throated Hummingbird" Fish and Wildlife Habitat Management Leaflet Numbers 34, 15, 5, and 14 respectively. <http://www.whmi.nrcs.usda.gov/technical/leaflet.htm>

USDA, NRCS, FS, Agroforestry Note No. 32. *Agroforestry: Sustaining Native Bee Habitat for Crop Pollination*, August 2006 and USDA, NRCS, FS, Agroforestry Note No.34. *Enhancing Nest Sites For Native Bee Crop Pollinators*, February 2007. <http://www.unl.edu/nac>

Farming for Bees Guidelines http://www.xerces.org/pubs_merch/Farming_for_Bees.htm

Pollinator Conservation Handbook http://www.xerces.org/pubs_merch/PCH.htm

How to Reduce Bee Poisoning from Pesticides <http://extension.oregonstate.edu/catalog/pdf/pnw/pnw591.pdf>