

Appendix G — Precommercial thinning examples for Alternatives D and F

1. Planted white pine – Alternatives D and F

Daylight thinning may be allowed in planted rust-resistant white pine if 80 percent of the snowshoe hare forage is retained. The maximum reduction in snowshoe hare forage and cover would be 20 percent. Allow local variations in spacing, depending on levels of rust-resistance and white pine stocking.

Researchers suggest the clearing radius be at least four feet and suggest the optimum competitive advantage is gained at ten feet. To keep the reduction in hare forage under 20 percent, a four-foot radius would allow daylight thinning around a maximum of 173 trees per acre; a 10-foot radius would protect at most 28 trees per acre. The trees selected to daylight would be the best performing planted, rust-resistant white pine. No thinning would be allowed outside specified clearing limits.

2. Promoting larch or ponderosa pine for large trees – Alternative D

Daylight thinning may be allowed to release larch or ponderosa pine to promote large trees that can survive fire in the future and be available to re-seed future stands. The maximum reduction in snowshoe hare forage and cover would be 20 percent.

The number of trees selected for daylight thinning would vary, depending on local fire history, desired snag levels, and management objectives. For example, to stay within the 20 percent loss limit, a clearing radius of 12 feet would result in protecting a maximum of 20 trees per acre. A clearing radius of 15 feet would protect at most 12 trees per acre. No thinning would be permitted outside the clearing limits.

3. Promoting lodgepole pine for old growth – Alternative D

Where the choice has been made to manage lodgepole pine to develop old growth characteristics, thinning would be allowed. One approach is found in John Shaw's dissertation, "Silvicultural Systems for Maintenance of Structure in a Forest Landscape" (Shaw 2002).

4. Where forage exceeds the range of historic conditions – Alternative D

Thinning may be allowed when a broadscale assessment has determined that forage conditions exceed the range of historic conditions. Generally, this is when current conditions exceed historic, or when a disturbance occurs over a large area and one similar condition is created. For example, if a 50,000-acre fire burns within an LAU or LAUs, precommercial thinning would be allowed in part, but not all, of the burned area, to create diversity.

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Appendix H — TEPS animals

Table H-1. Affects to Threatened, endangered, proposed or sensitive animals* whose habitat overlaps lynx habitat

Montana NFs										Idaho NFs					Utah NF	Wyoming NFs		
Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho Panhandle	Nez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone	
Endangered																		
Mammals																		
Gray wolf	+/-		+/-		+/-	+/-	+/-	+/-		+/-		+/-	+/-		+/-			
Woodland caribou										0								
Fish																		
Bonytail chub														0	0			
Colorado pikeminnow														0	0			
Humpback chub														0	0			
Kendall Warm Springs dace															0			
Pallid sturgeon															0			
Razorback sucker														0	0			
Sockeye salmon												+/-						
White sturgeon								0		0								
Threatened																		
Mammals																		
Canada lynx			+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-		+/-		+/-		+/-	
Gray wolf (10j rule)	+/-	+/-	+/-		+/-			+/-	+/-	+/-	+/-					+/-	+/-	
Grizzly bear	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-		+/-		+/-	
Birds																		
Bald eagle	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Fish																		
Bull trout	+/-	+/-		+/-		+/-	+/-		+/-	+/-	+/-	+/-						
Chinook salmon		+/-								+/-		+/-	+/-					
Steelhead trout		+/-								+/-		+/-	+/-					

Appendix H TEPS Animals

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs		
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho Panhandle	Nez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone
Mammals	<u>Sensitive</u>																	
Fisher	+/-	+/-		+/-		+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-		+/-		
Fringed myotis										0	0	0					0	0
Great basin pocket mouse	0																	
Long-eared myotis			0															
Long-legged myotis			0															
Marten																+/-	+/-	
Northern bog lemming	0	0		0		0	0	0	0		0	0						
Pallid bat			0															
Pygmy rabbit	0												0					
River otter																		0
Spotted bat			0										0	0	0	0	0	0
Townsend's big-eared bat	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Water vole																	0	0
Wolverine	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
Birds																		
Baird's sparrow			0															
Black-backed woodpecker	+	+	+	+	+	+	+	+	+	+	+	+						+
Black swift											0	0						
Black tern																		0
Blue-gray gnatcatcher			0															
Boreal owl													+/-	+/-	+/-	+/-	+/-	+/-
Brewer's sparrow																	0	0
Burrowing owl			0					0										0
Common loon				0			0		0		0			0		0		
Ferruginous hawk																		0
Flammulated owl	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Grasshopper sparrow																	0	0
Great gray owl													+/-	+/-	+/-	+/-		
Harlequin duck	0		0	0	0	0	0	0	0	0	0	0	0	0		0	0	0
Lewis' woodpecker																	0	0
	<u>(Sensitive, continued)</u>																	
Loggerhead shrike			0														0	0

Appendix H TEPS Animals

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs		
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho Panhandle	Nez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone
Long-billed curlew			0															0
Mountain plover																		0
Mountain quail												0						
Northern goshawk	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
Northern harrier																	0	0
Olive-sided flycatcher																	+/-	+/-
Peregrine falcon	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0	0	0
Pygmy nuthatch										0	0	0						
Sage grouse	0		0					0					0	0	0	0	0	
Sage sparrow																	0	
Short-eared owl																	0	0
Three-toed woodpecker													+	+	+	+	+	+
Trumpeter swan	0				0									0		0		0
White-headed woodpecker												+						
Yellow-billed cuckoo																		0
Fish																		
Arctic grayling	+/-				+/-			+/-										
Bonneville cutthroat trout																+/-		
Burbot											+/-							
Colorado River cutthroat trout															+/-	+/-		
Interior redband trout								+/-		+/-	+/-	+/-						
Mountain sucker																	+/-	+/-
Northern redbelly dace			0															
Pacific lamprey		+/-								+/-		+/-						
Snake River spring/summer chinook		+/-								+/-		+/-						
Snake River cutthroat trout														+/-		+/-		
Sturgeon chub			0															
West slope cutthroat trout	+/-	+/-		+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-					
(Sensitive, continued)																		
Yellowstone cutthroat trout			+/-		+/-												+/-	+/-

Appendix H TEPS Animals

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs		
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho Panhandle	Nez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone
Amphibians & reptiles																		
Boreal toad	+	+	+	+	+	+	+	+	+	+	+	+						+
Coeur d'Alene salamander		0					0		0	0	0	0						
Great Plains toad			0															
Greater short-horned lizard			0					0										
Milk snake			0															
Northern leopard frog	+	+	+	+	+	+	+	+	+								+	+
Plains spadefoot toad			0			0												
Ringneck snake										0		0						
Spotted frog													0	0	0	0	0	0
Western hognose snake			0															
Wood frog																	0	
Invertebrates																		
Hudsonian emerald																		0

*Species documented or suspected to be present in lynx habitat

0	=	Species not affected by the alternatives
-	=	Adverse (negative) effects possible from implementing Alternatives B, C, D, E or F
+	=	Beneficial (positive) effects possible from implementing Alternatives B, C, D, E or F
+/-	=	Either adverse or beneficial effects from implementing Alternatives B, C, D, E or F

Sources for evaluating habitat effects include:

Brainerd 1985	Martin et al. 1951	Sibley 2000	Whitaker 1996
Brocke et al. 1991	NaturServe Explorer, Version 1.6 2002	Smith 1984	Zielinski & Cucera 1995
Ehrlich et al. 1988	Nussbaum et al. 1983	USDA FS 2004a	USDA FS 2005
Johnsgard 1990	Schmidt & Gilbert 1978	USDA FS 2005b	USDA FS 2006

Appendix I — MIS species*

Table I-1. Affects to management indicator species whose habitat overlaps lynx habitat

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs		
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho Panhandle	Oez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone
	Mammals																	
Beaver								+									+	
California bighorn sheep													0			0		0
Bighorn sheep			0		0	0												
Black bear								+/-										
Bobcat								+										
Canada lynx				+/-				+/-										
Elk	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-
Fisher				+/-				+/-				+/-	+/-			+/-		
Gray wolf	+/-		+/-	+/-			+/-	+/-	+/-	+/-	+/-	+/-	+/-					+/-
Grizzly bear	+/-		+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-					+/-
Marten	+/-	+/-		+/-		+/-				+/-	+/-	+/-	+/-			+/-		
Montane vole	0																	
Moose	+									+	+	+				+		+
Mountain goat	0						0	0					0					0
Mountain lion								0										
Mule deer	+/-			+/-		+/-		+/-					+/-		+/-	+/-		+/-
Northern bog lemming				0														
Red squirrel													+/-	+/-			+/-	
Townsend's big-eared bat				0										0				
Water shrew	0																	
Western jumping mouse	0																	
White-tailed deer			+/-	+/-			+/-	+/-		+/-	+/-							
Wolverine				+/-				+/-						+/-				
Woodland caribou											+/-							

Appendix I Management Indicator Species

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs			
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho	Panhandle	Oez Perce	Salmon-Challis	Targhee	Ashley	Bridger-Teton	Bighorn	Shoshone
	Birds																		
Bald eagle	0		0	0	0	0	0	0	0	0	0	0	0	0	0				0
Belted kingfisher	0									0									
Black-backed woodpecker				0											+				
Blue grouse	+							+											+
Boreal owl				0											+/-	+/-	+/-	+/-	
Brewer's sparrow			0														0		0
Common loon				0											0		0		
Downy woodpecker															+				
Flammulated owl				0											0	0	0		
Golden eagle								0								0			
Great gray owl														+/-	+/-		+/-		
Hairy woodpecker	+					+									+				+
Harlequin duck				0											0				
Lincoln's sparrow																0			
Mountain bluebird														+					
Northern goshawk	+/-		+/-		+/-	+/-		+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-		+/-
Northern flicker															+				
Northern oriole			0																
Ovenbird			0																
Peregrine falcon	0		0	0			0	0	0	0		0	0	0	0				0
Pileated woodpecker	+/-	+/-		+/-		+/-	+/-		+/-	+/-	+/-	+/-	+/-	+/-					
Prairie falcon								0											
Pygmy nuthatch														0					
Red-breasted nuthatch																		+	
Red-napped sapsucker															+	+			
Ruby-crowned kinglet														+					
Ruffed grouse			0													0			0
Three-toed woodpecker	+							+							+	+	+	+	
Rufous-sided towhee			0																
Sage grouse																0			
Trumpeter swan	0														0				
(Birds, continued)																			
Vesper sparrow														0					

Appendix I Management Indicator Species

	Montana NFs									Idaho NFs					Utah NF	Wyoming NFs						
	Beaverhead-Deerlodge	Bitterroot	Custer	Flathead	Gallatin	Helena	Kootenai	Lewis & Clark	Lolo	Clearwater	Idaho	Panhandle	Dez Perce	Salmon-Challis	Targhee	0	0	0	Ashley	Bridger-Teton	Bighorn	Shoshone
Warbling vireo																						
White-crowned sparrow																						
White-tailed ptarmigan																						
Williamson's sapsucker															+							
Willow flycatcher	+																					
Yellow-bellied sapsucker														+								
Yellow warbler			+											+								
Fish																						
Arctic grayling	+/-																					
Bonneville cutthroat trout																				+/-		
Brook trout								+/-														
Bull trout				+/-										+/-								
Chinook salmon										+/-			+/-	+/-								
Colorado River cutthroat trout																				+/-		
Cutthroat trout	+/-	+/-	+/-			+/-		+/-			+/-	+/-	+/-				+/-					
Largemouth bass			0																			
Rainbow trout								+/-			+/-			+/-						+/-	+/-	
Snake River cutthroat trout															+/-					+/-		
Steelhead trout										+/-			+/-	+/-								
Trout					+/-																	+/-
Westslope cutthroat trout										+/-												
Yellowstone cutthroat trout				+/-											+/-							
Amphibians & reptiles																						
Spotted frog															0					0		
Invertebrates																						
Macro-invertebrates														+/-								

Appendix I Management Indicator Species

*MIS species were identified in the existing forest plans, as amended – or in the case of the Big Horn National Forest – as revised.

Species listed in *italics* are also listed as threatened, endangered, proposed, or sensitive species

0 = Species not affected by the alternatives

- = Habitat likely reduced (negative) by implementing Alternatives B, C, D or E

+ = Habitat likely improved (positive) by implementing Alternatives B, C, D or E

+/- = Some habitat reduced, some improved by implementing Alternatives B, C, D or E

Sources for evaluating habitat effects include:

Brainerd 1985	Schmidt & Gilbert 1978
Brocke et al. 1991	Sibley 2000
Ehrlich et al. 1988	Smith 1984
Johnsgard 1990	USDA FS 2003
Martin et al. 1951	USDA FS 2004
NaturServe Explorer, Version 1.6 2002	USDA FS 2006
Nussbaum et al. 1983	Whitaker 1996
	Zielinski & Cucera 1995

Appendix J
TES plant species found in the planning area, by state
2006 Updated List

Scientific name	Common name	ID	MT	UT	WY
<i>Adoxa moschatellina</i>	Musk-root		X		
<i>Agastache cusickii</i>	Cusick's horse-mint		X		
<i>Agoseris lackschewitzii</i>	Pink agoseris				X
<i>Allium acuminatum</i>	Tapertip onion		X		
<i>Allium parvum</i>	Small onion		X		
<i>Amerorchis rotundifolia</i>	Round-leaved orchis		X		X
<i>Andromeda polifolia</i>		X			
<i>Anemone lyallii</i>	Lyall's wood-anemone				X
<i>Anemone narcissiflora ssp zephyra</i>	Zephyr windflower				X
<i>Antennaria aromatica</i>	Aromatic pussytoes				X
<i>Antennaria densifolia</i>	Dense-leaved antennaria		X		
<i>Antennaria flagellaris</i>	Stoloniferous pussytoes				X
<i>Antennaria monocephala</i>	Single-head pussytoes				X
<i>Aquilegia brevistyla</i>	Short-styled columbine		X		
<i>Aquilegia formosa var formosa</i>	Crimson columbine		X		X
<i>Aquilegia grahamii</i>	Graham's columbine			X	
<i>Arabis falcatoria</i>	Rockcress			X	
<i>Arabis fecunda</i>	Sapphire rockcress		X		
<i>Arnica lonchophylla</i>	Northern arnica				X
<i>Artemisia campestris var. petiolata</i>				X	
<i>Artemisia norvegica var piceetorum</i>	Spruce wormwood			X	
<i>Asclepias ovalifolia</i>			X		
<i>Asplenium trichomanes-ramosum</i>	Green spleenwort	X			X
<i>Aster junciformis</i>		X			
<i>Astragalus anserinus</i>	Milkvetch			X	
<i>Astragalus desereticus</i>	Milkvetch			X	
<i>Astragalus equisolensis</i>	Horseshoe milkvetch			X	
<i>Astragalus jejunus var. jejunus</i>	Milkvetch			X	
<i>Astragalus lackschewitzii</i>	Lackschewitz's milkvetch		X		
<i>Astragalus microcystis</i>		X			
<i>Astragalus paysonii</i>	Payson's milkvetch	X			X
<i>Astragalus scaphoides</i>	Milkvetch		X		
<i>Astragalus shultziorum</i>	Shultz's milkvetch				X
<i>Athysanus pusillus</i>	Sandweed		X		
<i>Balsamorhiza macrophylla</i>	Large-leaved balsamroot		X		
<i>Bidens beckii</i>	Beck water-marigold		X		
<i>Betula pumila</i>		X			
<i>Blechnum spicant</i>	Deer-fern	X			

Appendix J TES Plants

Scientific name	Common name	ID	MT	UT	WY
<i>Botrychium ascendens</i>	Upward-lobed moonwort	X	X		
<i>Botrychium crenulatum</i>	Wavy moonwort	X	X		
<i>Botrychium echo</i>	Reflected grapefern			X	
<i>Botrychium hesperium</i>	Western moonwort		X		
<i>Botrychium lanceolatum</i> var <i>lanceolatum</i>	Lance-leaved moonwort	X			
<i>Botrychium lineare</i>	Slender moonwort	X			
<i>Botrychium minganense</i>	Mingan Island moonwort	X			X
<i>Botrychium montanum</i>	Mountain moonwort	X			
<i>Botrychium multifidum</i>	Leathery grapefern				X
<i>Botrychium paradoxum</i>	Peculiar moonwort	X	X	X	
<i>Botrychium pendunculosum</i>	Stalked moonwort	X	X		
<i>Botrychium pinnatum</i>	Northern moonwort	X			
<i>Botrychium simplex</i>	Least moonwort	X			
<i>Botrychium virginianum</i>	Rattlesnake fern				X
<i>Braya glabella</i>	Arctic braya				X
<i>Brasenia schreberi</i>			X		
<i>Bryoria subdivergens</i>			X		
<i>Buxbaumia aphylla</i>	Bug-on-a-stick	X			
<i>Buxbaumia viridis</i>	Leafless bug-on-a-stick	X			
<i>Calochortus nitidus</i>	Mariposa lily	X			
<i>Cardamine constancei</i>	Constance's bittercress	X			
<i>Carex amplifolia</i>	Big-leaf sedge		X		
<i>Carex buxbaumii</i>	Buxbaum's sedge	x			
<i>Carex chordorrhiza</i>	Creeping sedge	X	X		
<i>Carex comosa</i>	Sedge	X			
<i>Carex deweyana</i> var <i>bolanderi</i>	Bolander's sedge				X
<i>Carex diandra</i>	Lesser panicled sedge				X
<i>Carex flava</i>	Yellow sedge	x			
<i>Carex idaho</i>	Idaho sedge	X	X		
<i>Carex lacustris</i>	Sedge		X		
<i>Carex leptalea</i>	Bristly-stalk sedge	X		X	X
<i>Carex limosa</i>	Mud sedge				X
<i>Carex livida</i>	Pale sedge	X			X
<i>Carex luzulina</i> var <i>atropurpurea</i>	Black and purple sedge				X
<i>Carex microglochin</i>	False uncinia sedge				X
<i>Carex paupercula</i>	Poor sedge	X			
<i>Carex prairea</i>	Prairie sedge		X		
<i>Carex rostrata</i>	Beaked sedge		X		
<i>Carex vaginata</i>	Sedge		X		
<i>Castilleja covilleana</i>	Coville Indian paintbrush		X		
<i>Castilleja crista-galli</i>	Cock's comb paintbrush				X
<i>Castilleja nivea</i>	Snow paintbrush				X

Appendix J TES Plants

Scientific name	Common name	ID	MT	UT	WY
<i>Cetraria subalpina</i>			X		
<i>Cicuta bulbifera</i>	Bulbet-bearing water hemlock	X			X
<i>Cirsium eatonii</i> var <i>murdockii</i>	Murdock's thistle			X	
<i>Clarkia rhomboidea</i>	Common clarkia		X		
<i>Cladonia anderegii</i>		X			
<i>Claytonia arenicola</i>	Sand springbeauty		X		
<i>Collema curtisporum</i>	Short-spored jelly lichen	X	X		
<i>Cornus nuttallii</i>	Pacific dogwood	X			
<i>Corydalis sempervirens</i>	Pale corydalis		X		
<i>Cryptogramma stelleri</i>	Fragile rockbrake				X
<i>Cymopterus evertii</i>	Evert's waterparsnip				X
<i>Cypripedium fasciculatum</i>	Clustered lady's slipper	X	X	X	
<i>Cypripedium montanum</i>	Lady's slipper				X
<i>Cypripedium parviflorum</i>	Small yellow lady's slipper		X		X
<i>Cypripedium passerinum</i>	Sparrow's-egg lady's slipper		X		
<i>Dasynotus daubermirei</i>	Daubermire's dasynotus	X			
<i>Deschampsia danthonioides</i>	Annual hairgrass				X
<i>Descurainia torulosa</i>	Wyoming tansymustard				X
<i>Douglasia idahoensis</i>	Douglasia	X			
<i>Draba borealis</i>	Boreal draba				X
<i>Draba brachystylis</i>	Shortstyle draba			X	
<i>Draba crassa</i>	Thick-leaf whitlow-grass				X
<i>Draba fladeniense</i> var <i>pattersonii</i>	White arctic whitlow-grass				X
<i>Draba globosa</i>	Rockcress draba or Beavertip draba		X	X	X
<i>Draba juniperina</i>	Fewseed draba			X	
<i>Drosera anglica</i>	English sundew		X		X
<i>Drosera intermedia</i>	Spoon-leaved sundew	X			
<i>Drosera linearis</i>	Linear-leaved sundew		X		
<i>Dryopteris cristata</i>	Buckler fern	X	X		
<i>Dryopteris expansa</i>	Spreading woodfern				X
<i>Eleocharis rostellata</i>	Beaked spikerush		X		
<i>Elymus innovatus</i>	Wild-rye		X		
<i>Epilobium palustre</i>	Swamp willow-weed	X			
<i>Epipactis gigantea</i>	Giant helleborine	X	X		
<i>Equisetum sylvaticum</i>	Woodland horsetail				X
<i>Ericameria discoidea</i> var <i>linearis</i>	Narrowleaf goldenweed				X
<i>Erigeron asperugineus</i>	Idaho fleabane		X		
<i>Erigeron evermannii</i>	Evermann fleabane		X		
<i>Erigeron lackschewitzii</i>	Lackschewitz' fleabane		X		
<i>Erigeron untermannii</i>	Indian Canyon fleabane			X	
<i>Eriogonum brevicaulis</i>	Buckwheat			X	

Appendix J TES Plants

Scientific name	Common name	ID	MT	UT	WY
<i>Eriophorum chamissonis</i>	Russet cottongrass				X
<i>Eriophorum gracile</i>	Slender cottongrass		X		X
<i>Eriophorum viridicarinatum</i>	Green keeled cottongrass	X			
<i>Eritrichum howardii</i>	Howard forget-me-not				X
<i>Eupatorium occidentale</i>	Western boneset		X		
<i>Festuca hallii</i>	Hall's fescue				X
<i>Gaultheria hispidula</i>	Creeping snowberry	X			
<i>Gentianopsis macounii</i>	Gentian		X		
<i>Gentianopsis simplex</i>	Hiker's gentian		X		
<i>Glossopetalon nevadense</i>			X		
<i>Goodyera repens</i>	Northern rattlesnake-plantain		X		
<i>Grimmia brittoniae</i>		X	X		
<i>Grindelia howellii</i>	Howell's gum-weed	X	X		
<i>Halimolobos perplexa</i> var <i>lemhiensis</i>	Puzzling rockcress	X	X		
<i>Haplopappus aberrans</i>	Goldenweed		X		
<i>Haplopappus carthamoides</i> var <i>subsquarrosus</i>	Beartooth large-flowered goldenweed		X		
<i>Haplopappus hirtus</i>	Goldenweed	X			
<i>Haplopappus insecticuriis</i>	Bug-leg goldenweed	X			
<i>Haplopappus macronema</i> var <i>macronema</i>	Discoid goldenweed		X		
<i>Heteranthera dubia</i>			X		
<i>Heterocodon rariflorum</i>	Western pearl-flower		X		
<i>Hookeria lucens</i>	Clear moss	X			
<i>Howellia aquatilis</i>	Water howellia		X		
<i>Hypericum majus</i>		X			
<i>Idahoia scapigera</i>			X		
<i>Ipomopsis crebrifolia</i>	Compact gilia		X		X
<i>Iris versicolor</i>	Blueflag	X			
<i>Juncus hallii</i>	Hall's rush		X		
<i>Kalmia polifolia</i>	Pale laurel		X		
<i>Kelloggia galioides</i>	Milk kelloggia				X
<i>Kobresia sibirica</i>	Siberian kobresia				X
<i>Kobresia simpliciuscula</i>	Simple bog sedge		X	X	X
<i>Lathyrus bijugatus</i>	Sweet pea		X		
<i>Lepidium barnebyanum</i>	Pepperweed			X	
<i>Lepidium integrifolium</i> var <i>integrifolium</i>	Entire leaved pepperweed			X	
<i>Lesquerella carinata</i> var <i>carinata</i>	Keeled bladderpod				X
<i>Lesquerella fremontii</i>	Fremont's bladderpod				X
<i>Lesquerella humilis</i>	Bitterroot bladderpod		X		
<i>Lesquerella paysonii</i>	Payson's bladderpod		X		X
<i>Lesquerella pulchella</i>	Beautiful bladderpod		X		

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Scientific name	Common name	ID	MT	UT	WY
<i>Liparis loeselii</i>	Yellow widelip orchid		X		
<i>Lomatium geyeri</i>	Geyer's biscuitroot		X		
<i>Lomatium salmoniflorum</i>	Desert parsley	X			
<i>Lonicera caerulea</i> var. <i>cauriana</i>	Western honeysuckle				X
<i>Lycopodiella inundata</i>	Northern bog clubmoss	X	X		
<i>Lycopodium dendroideum</i>	Groundpine clubmoss	X	X		
<i>Lycopodium lagopus</i>	Clubmoss		X		
<i>Marsilea vestita</i> var. <i>oligospora</i>	Pepperwort				X
<i>Meesia longisetia</i>	Messia	X			
<i>Meesia triquetra</i>			X		
<i>Mentzelia goodrichii</i>	Goodrich's blazingstar			X	
<i>Mertensia bella</i>	Oregon bluebells		X		
<i>Mimulus ampliatus</i>	Spacious monkeyflower	X			
<i>Mimulus alsinoides</i>	Monkeyflower	X			
<i>Mimulus breviplorus</i>	Monkeyflower		X		
<i>Mimulus nanus</i>	Monkeyflower		X		
<i>Mimulus patulus</i>	Stalk-leaved monkeyflower	X	X		
<i>Mimulus primuloides</i>	Primrose monkeyflower		X		
<i>Mirabilis macfarlanei</i>	MacFarlane's four-o'clock	X			
<i>Monardella odoratissima</i> var. <i>glauca</i>	Mountain wild-mint				X
<i>Najas guadalupensis</i>	Southern naiad				X
<i>Nodobryoria subdivergens</i>			X		
<i>Oenothera flava</i> var. <i>acutissima</i>	Flaming Gorge evening-primrose			X	
<i>Ophioglossum pusillum</i>	Adder's tongue		X		
<i>Orobanche corymbosa</i> var. <i>corymbosa</i>	Flat-top broomrape				X
<i>Orogenia fusiformis</i>	Tapered-root orogenia		X		
<i>Oxytropis podocarpa</i>	Stalked-pod crazyweed		X		
<i>Paeonia brownii</i>	Brown's peony				X
<i>Papaver kluanense</i>	Alpine poppy				X
<i>Papaver radicum</i> var. <i>pygmaeum</i>	Poppy			X	
<i>Parnassia kotzebuei</i>	Kotzebue's grass of Parnassus				X
<i>Parrya nudicaulis</i>	Naked-stemmed parrya				X
<i>Parrya rydbergii</i>	Naked stem wallflower			X	
<i>Pedicularis contorta</i> var. <i>ctenophora</i>	Pink coil-beaked lousewort				X
<i>Pellaea suksdorfiana</i>	Smooth cliff-brake				X
<i>Penstemon absarokensis</i>	Absaroka beardtongue				X
<i>Penstemon acaulis</i> var. <i>acaulis</i>	Beardtongue			X	
<i>Penstemon grahamii</i>	Graham's beardtongue			X	
<i>Penstemon caryi</i>	Cary's beardtongue				X
<i>Penstemon idahoensis</i>	Beardtongue			X	
<i>Penstemon lemhiensis</i>	Lemhi beardtongue	X	X		

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Scientific name	Common name	ID	MT	UT	WY
<i>Penstemon payettensis</i>	Payette beardtongue		X		
<i>Penstemon scariosus</i> var. <i>albifluvis</i>	Beardtongue			X	
<i>Penstemon uintahensis</i>	Uinta Mountain beardtongue			X	
<i>Pentagramma triangularis</i> ssp. <i>triangularis</i>		X			
<i>Petasites frigidus</i> var. <i>palmatus</i>	Coltsfoot	X	X		
<i>Phacelia argillacea</i>				X	
<i>Phegopteris connectilis</i>	Northern beechfern	X	X		
<i>Phlox diffusa</i> ssp. <i>scleranthifolia</i>	Diffuse phlox				X
<i>Phlox kelseyi</i> var. <i>missoulensis</i>	Missoula phlox		X		
<i>Physaria didymocarpa</i> var. <i>ianata</i>	Twinpod				X
<i>Polygonum douglasii</i> ssp. <i>austinae</i>	Austin's knotweed		X		
<i>Polypodium glycyrrhiza</i>		X			
<i>Polystichum braunii</i>	Braun's sword-fern	X			
<i>Potamogeton friesii</i>	Frie's pondweed				X
<i>Potamogeton obtusifolius</i>	Blunt-leaved pondweed		X		
<i>Potamogeton praelongus</i>	White-stemmed pondweed				X
<i>Potentilla cottamii</i>				X	
<i>Potentilla palustris</i>	Marsh cinquefoil			X	
<i>Potentilla quinquefolia</i>	Five-leaf cinquefoil		X		
<i>Potentilla subjuga</i>	Twinleaf cinquefoil				X
<i>Primula alcalina</i>	Alkali primrose	X	X		
<i>Primula egaliksensis</i>	Greenland primrose				X
<i>Primula incana</i>	Silvery primrose		X	X	
<i>Primula maguirei</i>	Primrose			X	
<i>Psilocarphus brevissius</i>			X		
<i>Pyrrocoma carthamoides</i> var. <i>subsquarrosa</i>	Absaroka goldenweed				X
<i>Pyrrocoma clementis</i> var. <i>villosa</i>	Hairy tranquil goldenweed				X
<i>Pyrrocoma integrifolia</i>	Manysted goldenweed				X
<i>Ranunculus gelidus</i>	Timberline buttercup				X
<i>Ranunculus jovis</i>	Jove's buttercup		X		
<i>Ranunculus karelinii</i>	Ice cold buttercup				X
<i>Rhizomnium nudum</i>		X			
<i>Rhynchospora alba</i>		X			
<i>Rubus arcticus</i> var. <i>acaulis</i>	Dwarf raspberry				X
<i>Salix barrattiana</i>	Barratt's willow		X		X
<i>Salix candida</i>	Hoary willow	X			X
<i>Salix myrtillofolia</i>	Blueberry willow				X
<i>Salix pedicellaris</i>	Willow	X			
<i>Saussurea weberi</i>	Weber's saw-wort		X		X
<i>Saxifraga tempestiva</i>	Storm saxifrage		X		
<i>Scheuchzeria palustris</i>	Pod grass	X	X		

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Scientific name	Common name	ID	MT	UT	WY
<i>Schoenocrambe argillacea</i>	Clay reed-mustard				
<i>Schoenocrambe suffrutescens</i>	Shrubby reed-mustard			X	
<i>Schoenoplectus subterminalis</i>		X			
<i>Sclerocactus glaucus</i>	Uinta basin hookless cactus			X	
<i>Scirpus cespitosus</i>	Tufted club-rush		X		
<i>Scirpus hudsonianus</i>	Hudson's Bay bullrush	X			
<i>Scirpus subterminalis</i>	Water bulrush		X		
<i>Scorpidium scorpioides</i>			X		
<i>Selaginella selaginoides</i>	Low spike-moss				X
<i>Shoshonea pulvinata</i>	Shoshone carrot		X		X
<i>Silene repens</i> var <i>australis</i>	Creeping campion				X
<i>Silene spaldingii</i>	Spalding's catchfly	X			
<i>Sparganium natans</i>	Small bur-reed				X
<i>Sphagnum mendocinum</i>	Peatmoss	X			
<i>Spiranthes diluvialis</i>	Ute ladies' tresses	X			
<i>Stephanomeria fluminea</i>	Teton wire-lettuce				X
<i>Streptopus streptopoides</i> var <i>brevipes</i>	Kruhsea twisted stalk	X			
<i>Sullivantia hapemanii</i> var <i>hapemanii</i>	Hapeman's sullivantia				X
<i>Symphyotrichum mollis</i>	Soft aster				X
<i>Synthyris platycarpa</i>		X			
<i>Thalictrum alpinum</i>	Alpine meadowrue		X		
<i>Thelypteris nevadensis</i>		X			
<i>Townsendia condensata</i> var <i>anomala</i>	North Fork Easter daisy				X
<i>Townsendia montana</i> var <i>caelilimensis</i>	Mountain townsendia			X	
<i>Triantha occidentalis</i> ssp. <i>brevistyla</i>		X			
<i>Trichophorum pumilum</i>	Pygmy bulrush				X
<i>Trientalis arctica</i>	Northern starflower	X			
<i>Trifolium eriocephalum</i> ssp. <i>arcuatum</i>	Wooly-head clover		X		
<i>Trifolium gymnocarpon</i>	Hollyleaf clover		X		
<i>Trifolium douglasii</i>	Douglas clover	X			
<i>Trifolium plumosum</i> var. <i>amplifolium</i>	Clover	X			
<i>Triteleia grandiflora</i>	Large-flower triteleia				X
<i>Utricularia intermedia</i>	Flat-leaved bladderwort		X		
<i>Utricularia minor</i>	Lesser bladderwort				X
<i>Vaccinium oxycoccos</i>	Bog cranberry	X			
<i>Veratrum californicum</i>	California false-hellebore		X		
<i>Viburnum edule</i>	Squashberry				X
<i>Viola lithion</i>	Violet			X	
<i>Viola renifolia</i> var <i>brainerdii</i>	Kidney-leaf white violet				X
<i>Waldsteninia idahoensis</i>	Idaho strawberry	X	X		
<i>Xerophyllum tenax</i>	Western beargrass				X
Totals	283	84	113	39	94

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