

APPENDIX B

GAP VEGETATION SYSTEMS IN THE NORTHWESTERN PLAINS

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Table B-1. GAP Level 3 Ecological Systems in the Northwestern Plains Ecoregion¹

GAP Level 1 Forest and Woodland Systems (6.92%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.16	2.34	Rocky Mountain Aspen Forest and Woodland
0.00	0.05	North-Central Interior Dry-Mesic Oak Forest and Woodland
0.00	0.01	North-Central Interior Dry Oak Forest and Woodland
0.02	0.22	North-Central Interior Maple-Basswood Forest
0.00	0.00	Eastern Great Plains Tallgrass Aspen Parkland
0.00	0.00	Northwestern Great Plains Aspen Forest and Parkland
0.03	0.40	Inter-Mountain Basins Curl-leaf Mountain Mahogany Woodland and Shrubland
0.82	11.90	Western Great Plains Wooded Draw and Ravine
0.29	4.12	Western Great Plains Dry Bur Oak Forest and Woodland
0.03	0.48	Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland
0.10	1.47	Northern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest
0.04	0.60	Northern Rocky Mountain Subalpine Woodland and Parkland
0.20	2.95	Rocky Mountain Foothill Limber Pine-Juniper Woodland
0.62	8.98	Rocky Mountain Lodgepole Pine Forest
0.12	1.70	Southern Rocky Mountain Dry-Mesic Montane Mixed Conifer Forest and Woodland
0.15	2.20	Northern Rocky Mountain Ponderosa Pine Woodland and Savanna
0.03	0.38	Southern Rocky Mountain Ponderosa Pine Woodland
0.45	6.54	Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland
0.01	0.18	Rocky Mountain Subalpine-Montane Limber-Bristlecone Pine Woodland
0.62	8.91	Middle Rocky Mountain Montane Douglas-fir Forest and Woodland
0.02	0.26	Rocky Mountain Poor-Site Lodgepole Pine Forest
3.14	45.33	Northwestern Great Plains - Black Hills Ponderosa Pine Woodland and Savanna
0.00	0.00	Northern Rocky Mountain Mesic Montane Mixed Conifer Forest
0.07	0.97	Rocky Mountain Subalpine Mesic Spruce-Fir Forest and Woodland

**Table B-1. GAP Level 3 Ecological Systems in the Northwestern Plains Ecoregion¹
(Continued)**

GAP Level 1 Shrubland and Savanna Systems (15.03%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.00	0.00	Inter-Mountain Basins Mixed Salt Desert Scrub
0.00	0.00	North-Central Interior Oak Savanna
0.01	0.07	Rocky Mountain Lower Montane-Foothill Shrubland
0.02	0.13	Rocky Mountain Alpine Dwarf-Shrubland
0.03	0.20	Western Great Plains Sandhill Steppe
0.03	0.20	Inter-Mountain Basins Big Sagebrush Shrubland
0.04	0.27	Wyoming Basins Dwarf Sagebrush Shrubland and Steppe
0.06	0.40	Northern Rocky Mountain Subalpine Deciduous Shrubland
0.10	0.67	Northern Rocky Mountain Montane-Foothill Deciduous Shrubland
0.25	1.66	Inter-Mountain Basins Mat Saltbush Shrubland
0.45	2.99	Northern Rocky Mountain Foothill Conifer Wooded Steppe
0.60	3.99	Northwestern Great Plains Shrubland
0.85	5.66	Inter-Mountain Basins Montane Sagebrush Steppe
12.59	83.77	Inter-Mountain Basins Big Sagebrush Steppe
GAP Level 1 Grasslands (39.62%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.00	0.00	North-Central Interior Sand and Gravel Tallgrass Prairie
0.02	0.05	Northern Tallgrass Prairie
0.03	0.08	Rocky Mountain Alpine Fell-Field
0.04	0.10	Central Tallgrass Prairie
0.04	0.10	Southern Rocky Mountain Montane-Subalpine Grassland
0.06	0.15	Central Mixedgrass Prairie
0.08	0.20	Rocky Mountain Dry Tundra
0.10	0.25	Northern Rocky Mountain Subalpine-Upper Montane Grassland
0.21	0.53	Rocky Mountain Subalpine-Montane Mesic Meadow
0.24	0.61	Western Great Plains Tallgrass Prairie
0.65	1.64	Western Great Plains Shortgrass Prairie
1.61	4.06	Northern Rocky Mountain Lower Montane, Foothill and Valley Grassland
4.46	11.26	Western Great Plains Sand Prairie
32.08	80.97	Northwestern Great Plains Mixedgrass Prairie

**Table B-1. GAP Level 3 Ecological Systems in the Northwestern Plains Ecoregion¹
(Continued)**

GAP Level 1 Riparian and Wetland Classes (4.09%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.00	0.00	Northern Rocky Mountain Conifer Swamp
0.00	0.00	Columbia Plateau Vernal Pool
0.00	0.00	Northern Rocky Mountain Wooded Vernal Pool
0.00	0.00	Inter-Mountain Basins Alkaline Closed Depression
0.00	0.00	Western Great Plains Floodplain
0.00	0.00	Rocky Mountain Subalpine-Montane Riparian Woodland
0.00	0.00	Eastern Great Plains Floodplain Systems
0.01	0.25	Rocky Mountain Subalpine-Montane Fen
0.01	0.25	Rocky Mountain Alpine-Montane Wet Meadow
0.01	0.25	Rocky Mountain Subalpine-Montane Riparian Shrubland
0.04	0.98	North American Arid West Emergent Marsh
0.04	0.98	Western Great Plains Open Freshwater Depression Wetland
0.06	1.47	Great Plains Prairie Pothole
0.06	1.47	Western Great Plains Closed Depression Wetland
0.11	2.70	Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland
0.12	2.94	Western Great Plains Riparian Woodland and Shrubland
0.14	3.43	Western Great Plains Saline Depression Wetland
0.15	3.68	Rocky Mountain Lower Montane Riparian Woodland and Shrubland
0.18	4.41	Northwestern Great Plains Floodplain
0.21	5.15	Eastern Great Plains Wet Meadow, Prairie, and Marsh
0.37	9.07	Inter-Mountain Basins Greasewood Flat
0.53	12.99	Western Great Plains Depressional Wetland Systems
0.69	16.91	Western Great Plains Floodplain Systems
1.35	33.09	Northwestern Great Plains Riparian

**Table B-1. GAP Level 3 Ecological Systems in the Northwestern Plains Ecoregion¹
(Continued)**

GAP Level 1 Human Land Use (25.76 %)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.01	0.04	Developed, High Intensity
0.08	0.31	Developed, Medium Intensity
0.08	0.31	Quarries, Mines, Gravel Pits and Oil Wells
0.26	1.01	Developed, Low Intensity
1.53	5.94	Developed, Open Space
3.80	14.75	Pasture/Hay
20.01	77.68	Cultivated Cropland
GAP Level 1 Recently Disturbed or Modified (4.52%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.00	0.00	Ruderal Wetland and Forest
0.01	0.22	Harvested Forest - Grass/Forb Regeneration
0.02	0.44	Harvested Forest - Northwestern Conifer Regeneration
0.01	0.22	Recently Burned Grassland
0.01	0.22	Introduced Upland Vegetation - Shrub
0.03	0.66	Introduced Riparian and Wetland Vegetation
0.04	0.88	Harvested Forest-Shrub Regeneration
0.07	1.55	Disturbed, Non-Specific
0.09	1.99	Recently Burned Forest
0.44	9.73	Introduced Upland Vegetation - Annual Grassland
1.28	28.32	Recently Burned Shrubland
2.52	55.75	Introduced Upland Vegetation - Perennial Grassland and Forbland
GAP Level 1 No Data (0.00%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.00	NA	No Data

**Table B-1. GAP Level 3 Ecological Systems in the Northwestern Plains Ecoregion¹
(Continued)**

GAP Level 1 Sparsely Vegetated/Barren Classes (2.37%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
0.01	0.57	Rocky Mountain Cliff, Canyon and Massive Bedrock
0.02	0.90	Inter-Mountain Basins Shale Badland
2.07	87.33	Western Great Plains Badland
0.00	0.05	North American Alpine Ice Field
0.07	3.06	Rocky Mountain Alpine Bedrock and Scree
0.06	2.43	Southwestern Great Plains Canyon
0.12	5.06	Inter-Mountain Basins Active and Stabilized Dune
0.01	0.50	Western Great Plains Cliff and Outcrop
0.00	0.10	Inter-Mountain Basins Cliff and Canyon
GAP Level 1 Open Water (1.69%)		
Percent of Ecoregion	Percent of System	GAP Level 3 Ecological Systems
1.69	NA	Open Water

¹ Ecoregion inclusions are included.

Bolding indicates Level 3 Ecological Systems included in the Coarse Filter Conservation Elements.

Classes adapted from:

US Geological Survey, National Biological Information Infrastructure, Gap Analysis Program (GAP). February 2010. National Land Cover, Version 1, Available at <http://www.gap.uidaho.edu/landcoverviewer.html> (Accessed: October 2010).

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Table B-2. Idaho Land Cover Classification System Cross-walk with Northwestern Plains Level 3 Ecosystems

Information: Where the Northwest ReGap mapping unit (ecological system) included more than one formation (Forest, Woodland, Mesic Shrubland, etc.) we assigned it to the structurally taller or denser formation. For example, forested ecological systems that include "forest and woodland" descriptors (e.g. Rocky Mountain Aspen Forest and Woodland) were assigned to the appropriate forest division (e.g. Deciduous Forest) rather than woodland division for mapping. Where an ecological system had "woodland and savanna" or "woodland and parkland" in its title it was assigned to the woodland division rather than a grassland division for mapping. In addition, some ecological systems listed here are not listed on the NatureServe website as being in Idaho. These are identified with an * after the ecological system name and are likely mis-classified if mapped in Idaho.

Class	Formation	Division	Northwestern Plains Level 3 Ecosystems
1. Forest and Woodland	Forest	Deciduous Forest	Rocky Mountain Aspen Forest and Woodland
	Woodland	Deciduous Woodland	Western Great Plains Wooded Draw and Ravine
			Western Great Plains Dry Bur Oak Forest and Woodland
			Western Great Plains Floodplain Systems ¹
			Northwestern Great Plains Floodplain
			Eastern Great Plains Floodplain Systems
			Western Great Plains Floodplain
			Northwestern Great Plains Riparian ²
			Rocky Mountain Lower Montane Riparian Woodland and Shrubland
			Western Great Plains Riparian Woodland and Shrubland
			Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland
			Other Deciduous Woodland ³
			Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland
			Eastern Great Plains Tallgrass Aspen Parkland
			Northwestern Great Plains Aspen Forest and Parkland
		Evergreen Woodland	Northwestern Great Plains - Black Hills Ponderosa Pine Woodland and Savanna ⁴
			Northern Rocky Mountain Ponderosa Pine Woodland and Savanna
			Southern Rocky Mountain Ponderosa Pine Woodland
			Northern Rocky Mountain Foothill Conifer Wooded Steppe
			Rocky Mountain Foothill Limber Pine - Juniper Woodland
			Recently Burned Forest
	Harvested Forest - Northwestern Conifer Regeneration		
	Harvested Forest - Grass/Forb Regeneration		

Table B-2. Idaho Land Cover Classification System Cross-walk with Northwestern Plains Level 3 Ecosystems (Continued)

Class	Formation	Division	Northwestern Plains Level 3 Ecosystems		
2. Mesic Shrubland and Grassland	Mesic Shrubland (Deciduous and Evergreen)		Northwestern Great Plains Shrubland ⁵		
			Western Great Plains Sandhill Steppe		
			Inter-Mountain Basins Greasewood Flat		
			Harvested Forest-Shrub Regeneration		
	Mesic Grassland	Perennial Grassland		Northwestern Great Plains Mixedgrass Prairie ⁶	
				Central Mixedgrass Prairie	
				Western Great Plains Sand Prairie	
				Northern Rocky Mountain Lower Montane, Foothill and Valley Grassland	
				Western Great Plains Shortgrass Prairie	
				Western Great Plains Tallgrass Prairie ⁷	
				Central Tallgrass Prairie	
				Northern Tallgrass Prairie	
				North-Central Interior Sand and Gravel Tallgrass Prairie	
				Recently Burned Grassland	
		Emergent Wetland			Western Great Plains Depressional Wetland Systems ⁸
					Western Great Plains Saline Depression Wetland
					Western Great Plains Closed Depression Wetland
					Great Plains Prairie Pothole
					Western Great Plains Open Freshwater Depression Wetland
Columbia Plateau Vernal Pool					
Inter-Mountain Basins Alkaline Closed Depression					
Eastern Great Plains Wet Meadow, Prairie, and Marsh ⁹					
North American Arid West Emergent Marsh					
3. Semi-Desert Shrubland and Grassland	Semi-Desert Shrubland	Deciduous Shrubland	Inter-Mountain Basins Mat Saltbush Shrubland ¹⁰		
			Inter-Mountain Basins Mixed Salt Desert Scrub		
		Evergreen Shrubland			Inter-Mountain Basins Big Sagebrush Steppe ¹¹
					Wyoming Basins Dwarf Sagebrush Shrubland and Steppe
					Inter-Mountain Basins Big Sagebrush Shrubland
	Recently Burned Shrubland				
	Inter-Mountain Basins Montane Sagebrush Steppe				
	Semi-Desert Grassland	Perennial Grassland		Introduced Upland Vegetation - Perennial Grassland and Forbland	
				CRP	
		Annual Grassland		Introduced Upland Vegetation - Annual Grassland	
4. Sparse Vegetation and Natural Barren Areas		Unconsolidated Materials	Western Great Plains Badland ¹²		
			Southwestern Great Plains Canyon		
			Inter-Mountain Basins Shale Badland		
			Rocky Mountain Cliff, Canyon and Massive Bedrock		
			Western Great Plains Cliff and Outcrop		
			Inter-Mountain Basins Cliff and Canyon		
			Inter-Mountain Basins Active and Stabilized Dune		

Table B-2. Idaho Land Cover Classification System Cross-walk with Northwestern Plains Level 3 Ecosystems (Continued)			
Class	Formation	Division	Northwestern Plains Level 3 Ecosystems
5. Agriculture		Crops	Cultivated Cropland
		Pasture, Hayland, Etc.	Recently Disturbed
			Pasture/Hay
			Introduced Riparian and Wetland Vegetation
			Introduced Upland Vegetation - Shrub
			Ruderal Wetland and Forest
			Rural Upland - Old Field
6. Urban and Other Developed Lands	Urban/Industrial/Excavation Areas	Urban	Developed, Open Space
			Developed, Low Intensity
			Developed, Medium Intensity
			Developed, High Intensity
		Industrial, Excavation and Other Areas	Quarries, Mines, and Gravel Pits
		Non-Specific Disturbed	
	Transportation, Communication and Energy Linear Features	Roads	
		Railroads	
		Communication/Energy Lines and Pipelines	
7. Open Water			Open Water
8. No Data			No Data

Notes:

N/A = information is not available from GAP

Level 3 ecosystems indented and displayed with colored letters have been included in the preceding Level 3 ecosystem, because of ecological similarity, as annotated below in the notes section. The percentages have been included in the total for the preceding ecosystem.

Level 3 ecosystems highlighted in blue are combined into the Deciduous Forest and Woodland and Mesic Shrubland Coarse Filters under Aquatic/Riparian/Floodplain and Wetland Systems in Table 4-3; those highlighted in blue are combined under the respective categories under Terrestrial Systems in Table 4-3.

1. Western Great Plains Floodplain Systems, also includes: Northwestern Great Plains Floodplain, Eastern Great Plains Floodplain Systems, and Western Great Plains Floodplain

2. Northwestern Great Plains Riparian, also includes: Rocky Mountain Lower Montane Riparian Woodland and Shrubland, Western Great Plains Riparian Woodland and Shrubland, and Northern Rocky Mountain Lower Montane Riparian Woodland and Shrubland.

3. Other Deciduous Woodland includes: Inter-Mountain Basins Mountain Mahogany Woodland and Shrubland, Eastern Great Plains Tallgrass Aspen Parkland, and Northwestern Great Plains Aspen Forest and Parkland

4. Northwestern Great Plains - Black Hills Ponderosa Pine Woodland and Savanna, also includes: Northern Rocky Mountain Ponderosa Pine Woodland and Savanna and Southern Rocky Mountain Ponderosa Pine Woodland

5. Northwestern Great Plains Shrubland, also includes: Western Great Plains Sandhill Steppe

6. Northwestern Great Plains Mixedgrass Prairie, also includes: Central Mixedgrass Prairie

7. Western Great Plains Tallgrass Prairie, also includes: Central Tallgrass Prairie, Northern Tallgrass Prairie, and North-Central Interior Sand and Gravel Tallgrass Prairie

8. Western Great Plains Depressional Wetland Systems, also includes: Western Great Plains Saline Depression Wetland, Western Great Plains Closed Depression Wetland, Great Plains Prairie Pothole, Western Great Plains Open Freshwater Depression Wetland, and Columbia Plateau Vernal Pool

9. Eastern Great Plains Wet Meadow, Prairie, and Marsh, also includes: North American Arid West Emergent Marsh

10. Inter-Mountain Basins Mat Saltbush Shrubland, also includes: Inter-Mountain Basins Mixed Salt Desert Scrub

11. Inter-Mountain Basins Big Sagebrush Steppe, also includes: Wyoming Basins Dwarf Sagebrush Shrubland and Steppe and Inter-Mountain Basins Big Sagebrush Shrubland

12. Western Great Plains Badland, also includes: Southwestern Great Plains Canyon, Inter-Mountain Basins Shale Badland, Rocky Mountain Cliff, Canyon and Massive Bedrock, Western Great Plains Cliff and Outcrop, and Inter-Mountain Basins Cliff and Canyon

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Table B-3. Level 3 Ecological Systems Omitted from the NWP Coarse-filter Analysis

Level 3 Ecological System	Percentage of Ecoregion Area Including Buffer
Rocky Mountain Lodgepole Pine Forest	0.56
Middle Rocky Mountain Montane Douglas-Fir Forest and Woodland	0.56
Rocky Mountain Subalpine Dry-Mesic Spruce-Fir Forest and Woodland	0.41
Rocky Mountain Poor-Site Lodgepole Pine Forest	0.02
Inter-Mountain Basins Aspen-Mixed Conifer Forest and Woodland	0.03
Total:	1.58

Note:

These Montane and Subalpine Systems were omitted due to their occurrence being wholly or largely within the HUC-10 buffer with adjoining areas of the Middle Rockies ecoregion and were identified as montane and subalpine ecosystems not representative of the Northwestern Plains ecoregion.

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