CHAPTER 3. LANDSCAPE DISTURBANCES

Road and Trail Distribution – Uncompahgre Plateau

This section evaluates the pattern of road and trail distribution on the Uncompahgre Plateau Geographic Area and the associated influences of this transportation network on vegetation and habitat. Both direct and indirect effects of roads and trails are discussed.

Existing Roads and Trails

Travel management planning efforts have been ongoing on the Uncompahgre Plateau Geographic Area over the past fifteen years. As a result, inventories of existing roads and trails are relatively complete. For the Uncompahgre (Uncompahgre Plateau and San Juans Geographic Areas) National Forest, route by route determinations were made in 2002 identifying which roads and trails will be maintained as part of the transportation system, what types of use will be allowed on those routes, and which routes will be eliminated, or decommissioned.

All existing roads and trails known to occur on the Uncompahgre Plateau Geographic Area were considered in this evaluation. For roads, this includes both classified or system roads (National Forest System Roads, county roads, state highways, federal highways, privately owned roads, Forest Service authorized roads) and unclassified roads (roads not currently identified as part of any of the above referenced systems). Roads are further categorized by maintenance level which relates to the type of road surface and type of vehicle: Level 1 – closed more than one year or administrative use only, level 2 – rough, high clearance vehicles, level 3 – native to gravel surface, passenger vehicles, level 4 – smooth gravel surface, passenger vehicles, level 5 – dust-free-possibly paved, passenger vehicles. The majority of roads on the Uncompahgre Plateau Geographic Area are Level 2 roads.

Trails are also divided between classified (or system) and unclassified trails. Trail use can be separated by motorized (ATV and motorcycle) and non-motorized (mountain bike, pack animal, hiker) uses.

On the Uncompahgre National Forests, unclassified roads and trails will be or have recently been decommissioned as the Travel Management Plan decisions are implemented. Because these routes are mostly still visible on the ground and habitat is or has recently been affected, all unclassified roads and trails are considered in this evaluation. .

To evaluate the direct influence roads and trails have on vegetation, the existing transportation inventory was compared to the existing vegetation cover. The following map (Figure 1) displays the road and trail transportation network. The following tables list the miles of roads (Tables 1 and 2) and trails (Table 3) that occur in the different cover types on the Uncompahgre Plateau Geographic Area.

Figure 1. Map of Existing Roads and Trails, Uncompahgre Plateau Geographic Area

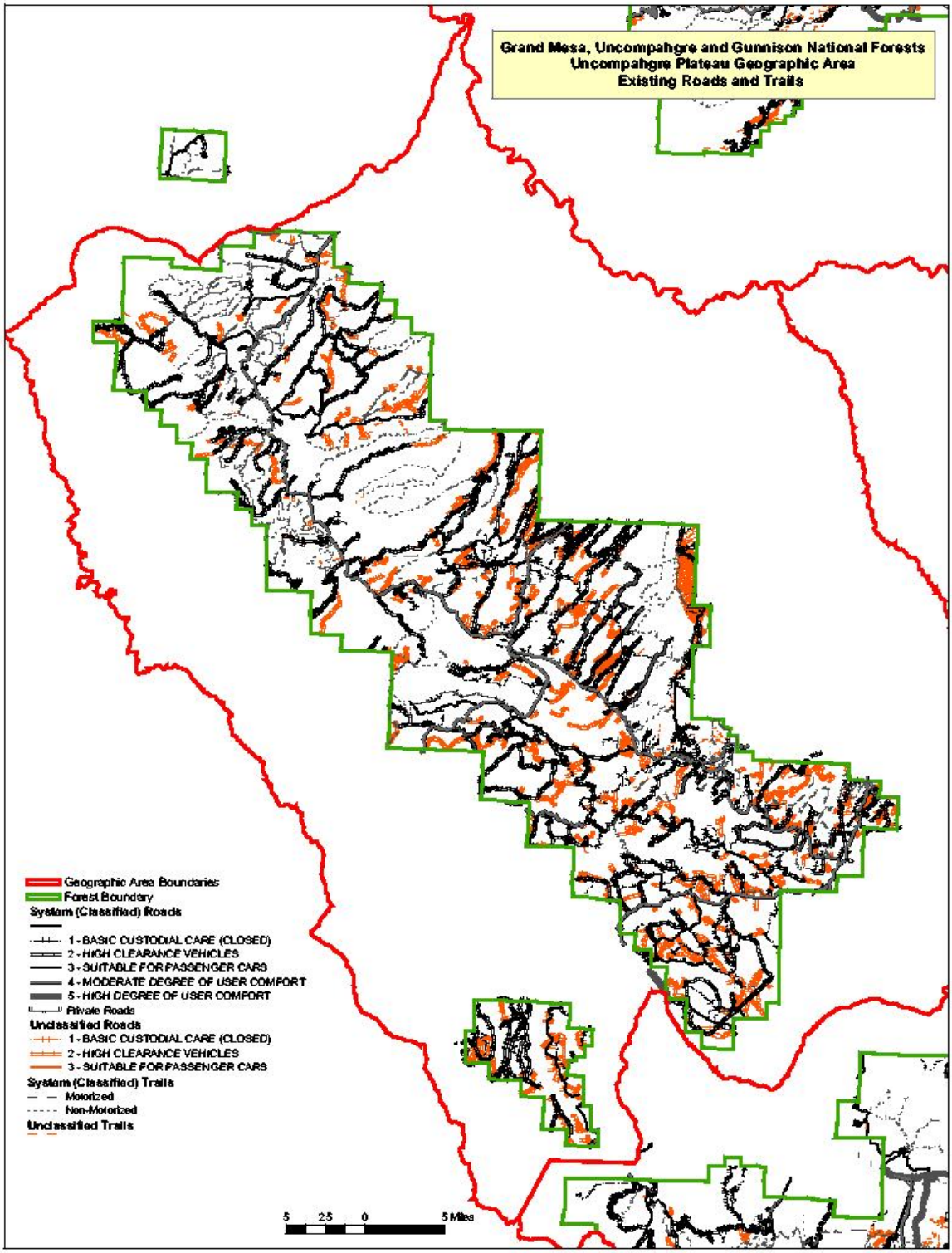

Table 1. Miles of Existing Roads within Different Cover Types, Uncompahgre Plateau Geographic Area (System miles in unshaded rows, unclassified miles in shaded rows)

Cover Type	1 - BASIC CUSTODIAL CARE (CLOSED)	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	4 - MODERATE DEGREE OF USER COMFORT	5 - HIGH DEGREE OF USER COMFORT	SubTotals*	Grand Total
Grass/Forb	17	81	22	12	2	133	**181**
	5	44	---	---	---	49	
Sagebrush	6	43	6	5	---	60	**101**
	<1	41	---	---	---	41	
Gambel Oak	31	156	19	15	1	221	**312**
	<1	90	---	---	---	90	
Mixed Mountain Shrub	1	7	1	1	---	10	**14**
	<1	4	---	---	---	4	
Snowberry	1	12	<1	10	---	24	**27**
	---	3	---	---	---	3	
Willow	<1	1	1	1	<1	3	**4**
	---	1	---	---	---	1	
Cottonwood	---	<1	---	<1	1	2	**2**
	---	<1	---	---	---	<1	
Aspen	46	129	22	40	---	237	**334**
	8	89	---	---	---	97	
Pinyon/Juniper	5	63	6	9	1	84	**134**
	5	45	---	---	---	50	
Ponderosa Pine	52	123	28	16	<1	219	**321**
	<1	102	---	---	---	102	
Lodgepole Pine	---	<1	---	<1	---	<1	**1**
	1	---	---	---	---	1	
Limber Pine	---	---	---	---	---	---	**---**
	---	---	---	---	---	---	
Douglas-fir	<1	1	---	1	---	2	**2**
	---	<1	---	---	---	<1	
Blue Spruce	<1	<1	---	---	---	<1	**<1**
	---	---	---	---	---	---	
Spruce/Fir	21	33	2	26	<1	83	**132**

Cover Type	1 - BASIC CUSTODIAL CARE (CLOSED)	2 - HIGH CLEARANCE VEHICLES	3 - SUITABLE FOR PASSENGER CARS	4 - MODERATE DEGREE OF USER COMFORT	5 - HIGH DEGREE OF USER COMFORT	SubTotals*	Grand Total
	4	45	---	---	---	49	
Bristlecone Pine	---	---	---	---	---	---	---
	---	---	---	---	---	---	
Bare/Rock	2	12	<1	1	---	15	**20**
	---	5	---	---	---	5	
Water	<1	<1	<1	<1	---	1	**2**
	---	1	---	---	---	1	
Subtotal	182	660	108	137	5	1,093	**1,587**
	24	471	---	---	---	494	
Grand Total	**206**	**1,131**	**108**	**137**	**5**	**1,587**	**1,587**

Table 2. Miles of Existing Roads within Different Cover Types, Uncompahgre Plateau Geographic Area

Cover Type	System Roads		Unclassified Roads		Total Road	
	Miles	**%**	**Miles**	**%**	**Miles**	**%**
Grass/Forb	133	12	49	10	181	11
Sagebrush	60	5	41	8	101	6
Gambel Oak	221	20	90	18	312	20
Mixed Mountain Shrub	10	1	4	1	14	1
Snowberry	24	2	3	1	27	2
Willow	3	<1	1	<1	4	<1
Cottonwood	2	<1	<1	<1	2	<1
Aspen	237	22	97	20	334	21
Pinyon/Juniper	84	8	50	10	134	8
Ponderosa Pine	219	20	102	21	321	20
Lodgepole Pine	<1	<1	1	<1	1	<1
Limber Pine						
Douglas-fir	2	<1	<1	<1	2	<1
Blue Spruce	<1	<1			<1	<1
Spruce/Fir	83	8	49	10	132	8
Bristlecone Pine						
Bare/Rock	15	1	5	1	20	1
Water	1	<1	1	<1	2	<1
Total	1,093		494		1,587	

The majority of road miles occur in aspen (21 percent), ponderosa pine (20 percent) and Gambel oak (20 percent) on the Uncompahgre Plateau Geographic Area. For system roads, the breakdown is similar to that for total roads. For unclassified roads, most are found in ponderosa pine (21 percent), then aspen (20 percent), and Gambel oak (18 percent).

Table 3. Miles of Existing Trails within Different Cover Types, Grand Mesa, Uncompahgre and Gunnison National Forests

	System Trails				Unclassified Trails		Total Trail	
Cover Type	**Motorized**	**Non-Motorized**	**Miles**	**%**	**Miles**	**%**	**Miles**	**%**
Grass/Forb	18	14	31	8	1	5	33	8
Sagebrush	6	5	11	3	0	2	12	3
Gambel Oak	47	60	106	28	7	28	113	28
Mixed Mountain Shrub	1	2	3	1	0	1	3	1
Snowberry	3	3	5	1		0	5	1
Willow	1	4	4	1	0	0	4	1
Cottonwood	0	0	0	0		0	0	0
Aspen	68	51	119	31	4	16	123	30
Pinyon/Juniper	5	36	41	11	6	24	47	12
Ponderosa Pine	16	17	33	9	4	15	37	9
Lodgepole Pine	0		0	0		0	0	0
Limber Pine			0	0		0	0	0
Douglas-fir		0	0	0		0	0	0
Blue Spruce	0		0	0		0	0	0
Spruce/Fir	19	6	25	7	2	9	27	7
Bristlecone Pine			0	0		0	0	0
Bare/Rock	0	0	0	0	0	0	1	0
Water			0	0		0	0	0
Total	183	198	381		24		406	

More miles of trails occur in aspen (30 percent) than in any other cover type, followed by Gambel oak (28 percent). This is the situation for system trails. For unclassified trails, most are found in Gambel oak (28 percent), then pinyon/juniper (24 percent).

Currently 94 percent of the existing trails are classified as system trails because of the recent travel management. Motorized trails make up 48 percent of the trail system and non-motorized trails comprise 52 percent. The unclassified trails have been or will be decommissioned as implementation of the Travel Plan continues.

Table 4 displays a comparison of the percentages of total road miles and total trail miles by cover type, to the percentages that each cover type occurs on the Uncompahgre Plateau Geographic Area.

Table 3. Comparison of Distribution of Roads and Trails to Distribution of Cover Types, Uncompahgre Plateau Geographic Area

Cover Type	% of Roads within Cover Type	% of Trails within Cover Type	Cover Type % of GMUG
Grass/Forb	11	8	6
Sagebrush	6	3	3
Gambel Oak	20	28	24
Mixed Mountain Shrub	1	1	1
Snowberry	2	1	1
Willow	<1	1	<1
Cottonwood	<1	0	<1
Aspen	21	30	25
Pinyon/Juniper	8	12	14
Ponderosa Pine	20	9	16
Lodgepole Pine	<1	0	<1
Limber Pine	---	0	---
Douglas-fir	<1	0	<1
Blue Spruce	<1	0	<1
Spruce/Fir	8	7	7
Bristlecone Pine	---	0	---
Bare/Rock	1	0	1
Water	<1	0	<1

There are proportionately more roads in grass/forb, sagebrush, snowberry, and ponderosa pine than would be expected if roads were equally distributed across all cover types. In contrast, there are proportionately less roads in Gambel oak, aspen, and pinyon/juniper cover types. Lower elevations, and relatively flat ground, and are the areas with more roads. Only the steeper areas and the two special areas managed as Wilderness are relatively route free on the Uncompahgre Plateau Geographic Area.

For trails, there are proportionately more trails in grass/forb, Gambel oak, and aspen cover types than would be expected if trails were equally distributed through cover types. There are proportionately less trails in pinyon/juniper and ponderosa pine. Because of the flat terrain, and past open travel that existed on the Uncompahgre Plateau, many routes that began as trails evolved into roads (hence the large number of roads in ponderosa pine), which only those routes on steeper areas remained as trails.

Areas Influenced by Existing Roads and Trails

Direct and indirect effects from transportation networks and the use of those networks have been shown to influence areas up to ½ mile away from a given road or trail. To evaluate the amount of area potentially affected by existing roads and trails on the Uncompahgre Plateau Geographic Area, the existing transportation network was buffered by ½ mile on either side. Figure 2 shows the extent of area within ½ mile of an existing road, Figure 3 shows the extent of area within ½ mile of an existing trail, and Figure 4 shows the combined area of the Uncompahgre Plateau Geographic Area that is within ½ mile of either an existing road or trail.

Table 5 lists the acres by cover type that are within ½ mile of an existing road or trail on the Uncompahgre Plateau Geographic Area. This table also shows the percentage of the

total buffer area that is comprised by each given cover type, the percentage of the total cover type that occurs within ½ mile of an existing route, as well as the acres and percentage of the total cover type that is not within ½ mile of an existing route.

Ninety percent of the Uncompahgre Plateau Geographic Area is within ½ mile of an existing road or trail. This is the highest of all five geographic areas, and higher than the forest-wide amount of 80 percent. Aspen, Gambel oak and ponderosa pine cover types make up the bulk of the acres within the buffer around existing transportation routes (26, 23, and 17 percent, respectively). However, the majority of all cover types on the Uncompahgre Plateau Geographic Area lie within ½ mile of an existing road or trail, ranging from a low of 68 percent for cottonwood to a high of 100 percent of lodgepole pine (planted, not naturally occurring) cover types.

Pinyon/juniper, Gambel oak and aspen cover types make up the bulk of the acreage that is outside the ½ mile buffer around existing roads and trails (29, 28 and 22 percent, respectively). Converse to the above situation, the minority of all cover types on the Uncompahgre Plateau are outside the area of influence from roads and trails.

Figure 2. Area Within ½ Mile Of An Existing Road, Uncompahgre Plateau Geographic Area

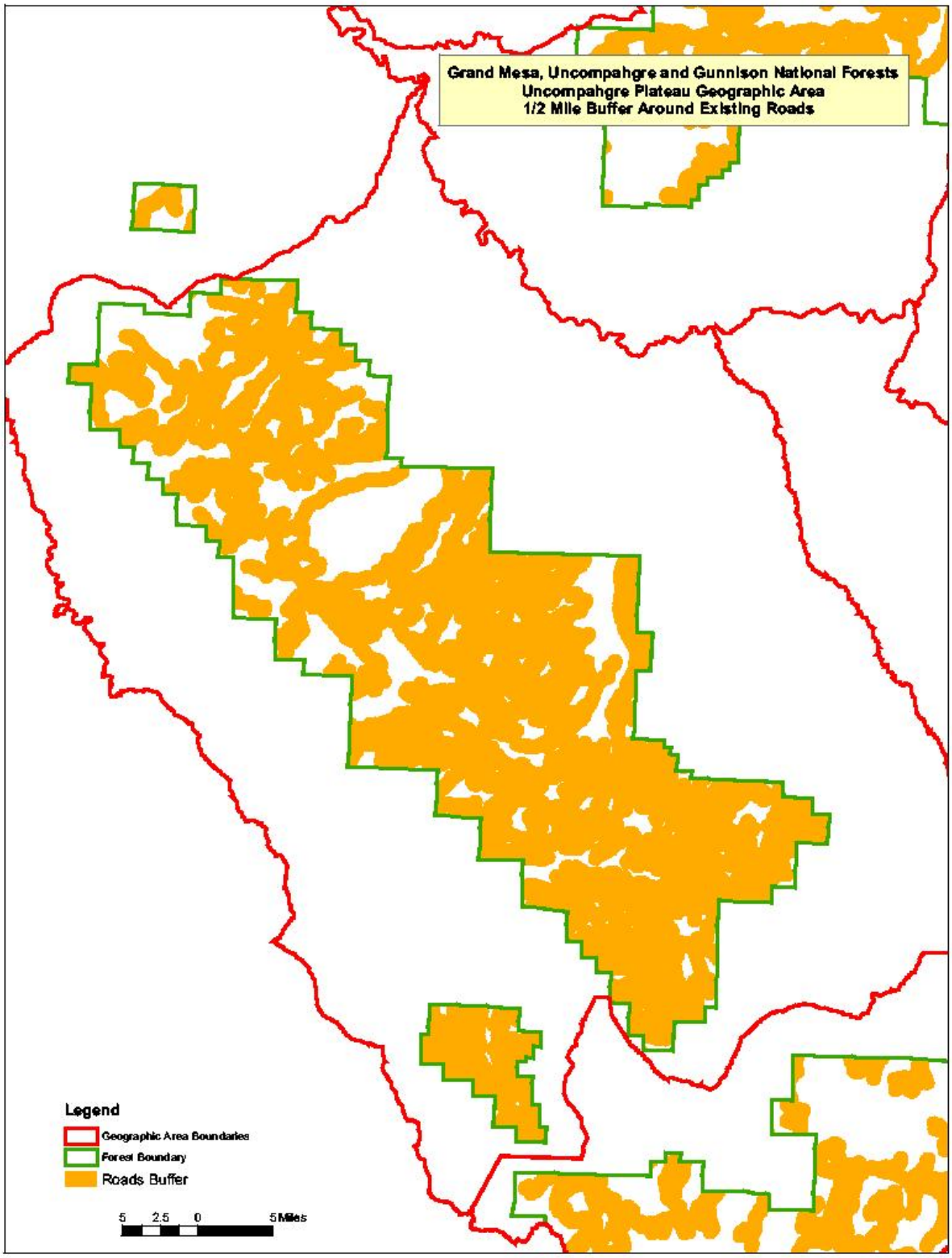

Figure 3. Area Within ½ Mile Of An Existing Trail, Uncompahgre Plateau Geographic Area

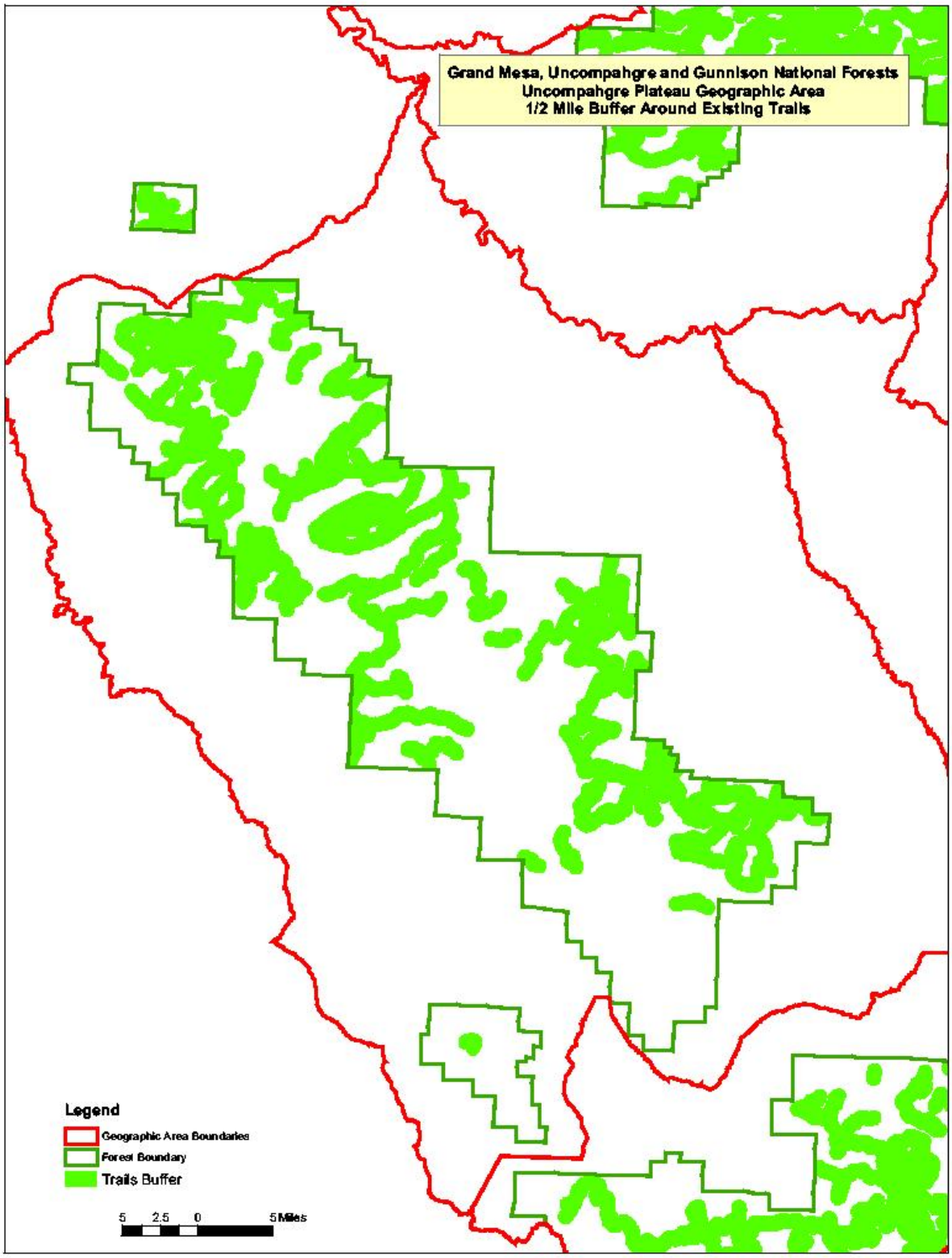

Figure 4. Area Within ½ Mile Of An Existing Road or Trail, Uncompahgre Plateau Geographic Area

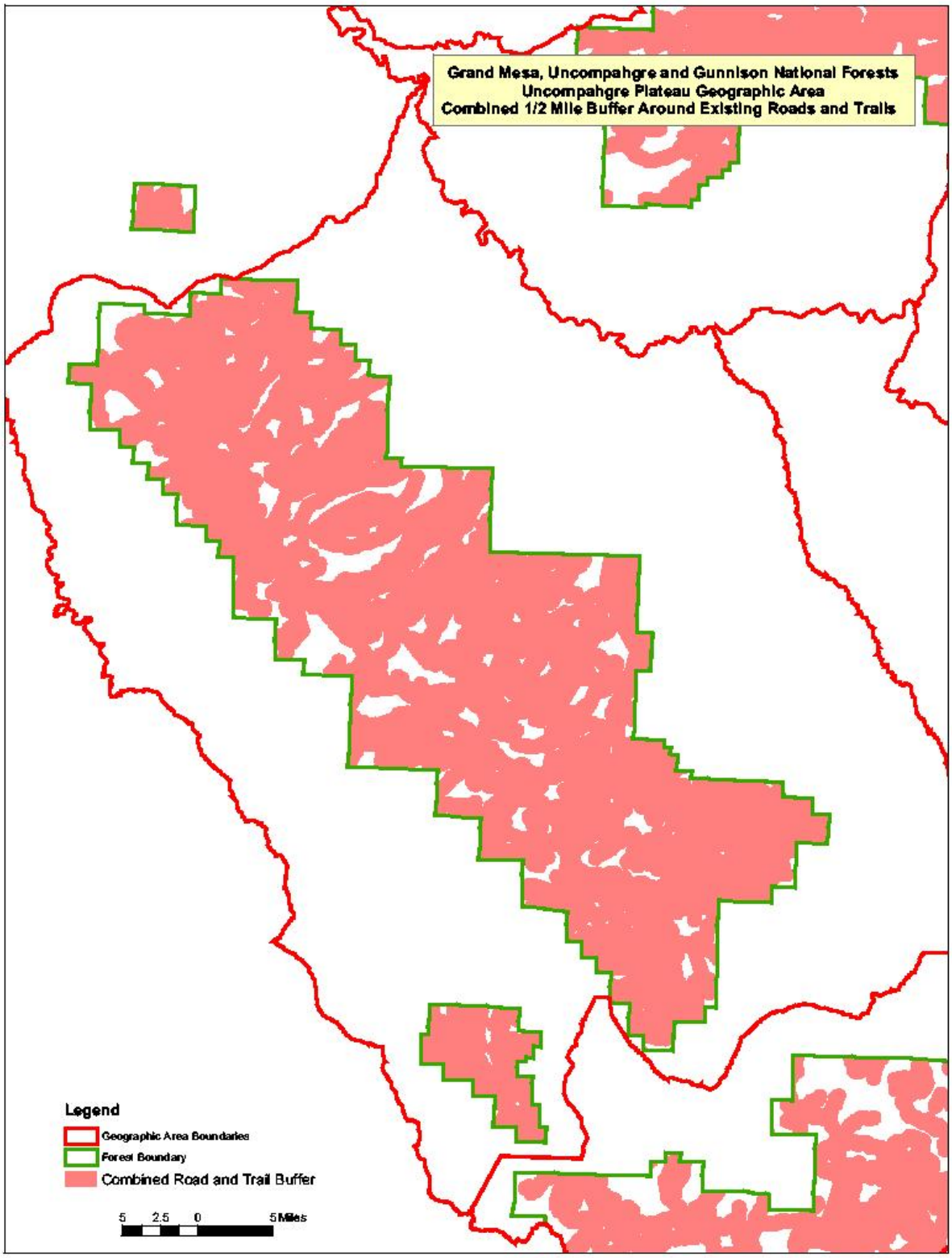

Table 5. Relative Amounts Of Acres In Cover Type, Inside And Outside Of ½ Mile Buffer Around Existing Routes, Uncompahgre Plateau Geographic Area.

Cover Type	Total Acres (UP GA)	Acres in Buffer	% of Buffer	% of Total Cover Type in Buffer	Acres Outside 1/2 mile Buffer	% of Area Outside of Buffer	% of Total Cover Type Outside Buffer
Grass/Forb	38,247	36,153	7	95	2,094	3	5
Sagebrush	19,453	18,393	3	95	1,059	2	5
Gambel Oak	147,007	129,716	23	88	17,291	28	12
Mixed Mountain Shrub	6,210	5,155	1	83	1,055	2	17
Snowberry	7,898	7,494	1	95	404	1	5
Willow	1,451	1,410	0	97	42	0	3
Cottonwood	1,318	902	0	68	416	1	32
Aspen	155,730	141,948	26	91	13,782	22	9
Pinyon/Juniper	86,562	68,566	12	79	17,996	29	21
Ponderosa Pine	99,123	94,282	17	95	4,842	8	5
Lodgepole Pine	178	178	0	100		0	0
Limber Pine							
Douglas-fir	2,578	2,117	0	82	461	1	18
Blue Spruce	175	169	0	96	6	0	4
Spruce/Fir	42,250	40,201	7	95	2,050	3	5
Bristlecone Pine							
Bare/Rock	6,025	5,784	1	96	241	0	4
Water	807	759	0	94	48	0	6
Grand Total	615,013	553,225		90	61,788		10

Key Findings

- Miles of existing (known) road network on the Uncompahgre Plateau Geographic Area

System	Unclassified	Total
1,100	500	1,600

- Roads occur mostly in aspen (21 percent), Gambel oak (20 percent), and ponderosa pine (20 percent) cover types.

- Miles of existing (known) trail network on the Uncompahgre Plateau Geographic Area

SystemTrails			Unclassified Trails	Total Trail Miles
Motorized	Non-motorized	System Subtotal		
180	200	380	20	400

- Trails occur mostly in aspen (30 percent), and Gambel oak (28 percent) cover types.

- Ninety percent of the Uncompahgre Plateau Geographic Area is within ½ mile of an existing road or trail. This is the highest percentage of all geographic areas.

- Seventy-nine percent or more of all cover types on the Uncompahgre Plateau Geographic Area occur within the ½ mile buffer.

Trends

- Because the existing road network is so extensive, the potential for future road development is low. Any new road construction that does occur will be associated with either oil and gas development or timber management, and these new roads will only be open to administrative traffic and/or temporary in nature.

Management Implications

- Travel management decisions (route-by-route) need to be implemented to reduce the density of existing roads and trails. While the area of influence will not be changed, reducing route density will reduce the amount of disturbance that can occur on these transportations routes, especially during hunting season, and as a result enhance habitat effectiveness.

- Because route-by-route decisions have been made which considered both resource management needs and recreation opportunities, opportunities for new roads and/or trails may be restricted by route density limitations.