

# Chapter 3

# Environmental Consequences



## ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected project area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart at the end of Chapter 2.

For the purpose of comparing alternatives the no action alternative will be analyzed as the 1992 Motorized Access and Travel Management Decision as it is being implemented today. This would include cross country travel occurring within the entire project area throughout the year.

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### Recreational Opportunity

This section incorporates by reference the Recreation analysis file contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of the affected environment and predicted effects of the alternatives are discussed here.

### OHV Oriented Activities

An issue that was brought up during scoping and project development was the concern that eliminating cross country motorized use would reduce OHV opportunities.

The analysis compares:

- Connections or access important to OHV users including: loops and connections, access to viewpoints, and access to the Morrow/Grant County OHV Park
- Miles of designated roads and trails open to OHV use

## **Affected Environment**

OHVs currently access to the entire 91,000 acre project area for OHV activities although most use occurs on open and closed roads. Because there is no defined boundary where the winter range begins and the general forest ends enforcement of OHV cross country travel has not occurred within the project area. Therefore OHVs have had the ability to create any loop or connection or to reach any destination limited only by their riding ability and the terrain. Access between the OHV Park and the Forest Service land could occur anywhere due to the cross country travel allowed on the National Forest but because the OHV Park has a designated trail system, and does not allow riders off of that system, access between the OHV Park and the Forest Service land is limited to those trails designated by the OHV Park.

## **Environmental Effects**

### **Alternative 1 – No Action**

#### ***Direct and Indirect Effects***

##### **Loops and Connections**

Since cross country travel occurs throughout the project area in the No Action Alternative the need for loops and connections can be made overland. Riders would continue to use open terrain to ride around obstacles and make needed connections cross country.

##### **Views Points**

This Alternative allows access to the major view points such as Wheeler Point, Collins Butte, Ant Hill, Little Tamarack Mountain, and Tamarack.

##### **Morrow/Grant County OHV Park Access**

The OHV Park is currently fencing the parks boundary and has designated trails. There is currently four locations where there is access into the park from the project area. These four locations are the only access into the OHV Park because the park does not allow cross country travel.

- Road 2039 and Road 2128 connects to the day use area.
- The OHV Park has installed a gate at FS Road 2100320 (closed).
- The OHV Park has installed a gate at FS Road 2128030 (closed).
- Cross country would no longer connect the OHV Park and the adjacent National Forest land due to the park boundary fence.

### **Alternative 2 – Proposed Action**

#### ***Direct and Indirect Effects***

##### **Loops and Connections**

During project development some popular loops currently being used as OHV trails were incorporated into the designated system. These loops and connections were included in the

proposed action after review by the interdisciplinary team to determine if resource damage would be limited or mitigated. A total of 77 miles of designated trails would be included to provide connections between designated roads (see Alternative 2 map in Appendix A). These connections would make riding loops and provide OHV users access between road systems that would otherwise have required backtracking or riding for many additional miles on roads open to vehicle traffic. In addition to the 77 miles of designated trails this alternative proposes to include 6 miles of new trail designation to enhance riding opportunities throughout the project area. The new trails are as follows:

- The proposed trail in sections 2 of T. 8 S., R. 26 E would provide a connecting loop between roads 2400156 and 2309020; a popular loop mentioned during project development.
- The proposed trail in section 25, of T. 7 S., R. 25 E. along with trails proposed in section 31 of T 7 S, R 26 E and sections 6 and 8 of T 8 S, R 26 E would provide a route around the 24 road that is closed to OHV use.
- The proposed trail in section 15, T 7 S, R 25 E would provide a connection from Fairview campground to FS Road 2000400. This would be the only OHV route in and out of the campground.
- The proposed seasonal trail in section 23 of T. 7S, R. 26 E. would provide a connection from the 2128065 road to the 2128060 road. This trail provides a large loop out of the OHV Park and also connects into most of the designated OHV system east of State Highway 207.

### **Views Points**

This Alternative allows access to the major view points, such as the Wheeler Point area, Collins Butte, Tamarack Mountain, Little Tamarack Mountain, and Ant Hill.

### **Morrow/Grant County OHV Park Access**

There are three connections proposed along the southern boundary of the Morrow/Grant County OHV Park (OHV Park).

- 2128320, this connection would provide access into the OHV Park on the west side.
- 2128065, this connection would provide OHVs access to the OHV Park on the east side of the OHV Park except during the rifle hunting seasons.
- 2128030 are proposed as designated trails and will include a new designated trail to tie into the OHV Park about one mile west of the seasonally designated trail on the east side of the OHV Park. These trails would complete the large loop out of the OHV Park.

### **Cumulative Effects**

The Morrow/Grant County OHV Park is located along the northern boundary of the east portion of the project area. Proposed connections to the OHV Park are included in the direct and indirect effects. The 1992 ATM Plan designated FS Road 2039000 as an OHV route. This road enters the OHV Park one mile northeast of Bull Prairie. Connections to the OHV Park provide cumulative

riding opportunities. Adding connections and increasing loop opportunities reduces overall backtracking and generally reduces total miles traveled to obtain the desired recreational experience and destination.

There are several locations along the project boundary that are administered by the Bureau of Land Management. None of these areas have roads or designated OHV trails that are connected into the proposed Forest Service designated trail system. All other property along the boundary is privately owned. For this reason there are no other areas outside of the OHV Park that would affect loops or connections, access to viewpoints or access into the OHV Park.

Other OHV opportunities exist on the Umatilla National Forest and within the Morrow/Grant County OHV Park. The Umatilla National Forest has approximately 230 miles of designated trails open to OHV activities and 1,800 miles of designated roads (open roads) available for OHV use. The Morrow/Grant County OHV Park currently has over 140 miles of trails.

Other projects occurring on the District that may affect use of designated routes would include temporary road closure for active timber sales, prescribed burning, road maintenance, or wildfire suppression. At any time one of these activities could temporarily close or block a designated route. Gates used for grazing allotment management may also create the appearance of a closure but would not eliminate OHV access to a designated road or trail.

## **Alternative 3**

### ***Direct and Indirect Effects***

#### **Loops and Connections**

There are no new trails, loops, or connections in this Alternative. Eliminating cross country travel would limit overall riding loops and connections to open roads designated for OHV use in the 1992 ATM Plan.

- There is still a connection by open roads from the 25 road area and the top of the ridge road 2142, and roads 2516/2519.
- There is limited riding in the Long Prairie and Brown Creek area.
- Roads 23 and 2402 would have a dead end.
- The Whitetail Butte area would have limited riding other than open road 2000350.
- OHVs can still ride between the Grassy Butte Area south of Bull Prairie on open roads.

#### **Views Points**

Eliminating cross country travel would limit access to viewpoints to open roads designated for OHV use in the 1992 ATM Plan.

- Access to Tamarack Mountain and the Wheeler Point area would remain under this alternative. These view points are accessible by all highway legal motor vehicles.
- There would be no OHV access to Collins Butte.
- There would be no OHV access to Ant Hill.

### **Morrow/Grant County OHV Park Access**

Although there are two connections between the OHV Park and the Forest designated for OHV use in the 1992 ATM Plan these connections provide very little riding opportunity.

- Designated Road 2039 would bring all OHV riders that want to access the National Forest into the Bull Prairie area and out to State Highway 207. The total designated roads available to ride OHV from this connection would be about 7 miles. This designated road would not provide connections to other riding areas on the National Forest.
- Designated Road 2128 would provide about half mile of OHV riding before reaching a road designated as closed to OHV use.

### **Cumulative Effects**

Cumulative effects are the same as described in Alternative 2.

## **Alternative 4**

### **Direct and Indirect Effects**

#### **Loops and Connections**

Alternative 4 addresses the idea of providing riding loops and larger connections across the project area between the Morrow/Grant County OHV Park and connecting areas east and west of Highway 207. All designated roads and designated trails would include those identified in Alternative 2 with five additional trail designations and one designated trail altered. Although the mileage difference between Alternative 2 and 4 is small this alternative adds six additional loops for longer rides and develops connections across the entire project area that are not included in Alternative 2.

- Designate a trail on the 2100428 and designate a new trail between 2142000 and 2100428. This route would provide access around mixed use restriction on Road 21 from the Brown Creek-Long Prairie area. This provides a 5 to 6 mile riding loop in the Long Prairie area.
- Designate a trail on the 2100393 to create a connection between designated roads 2141000 and 2100390. This would provide a second connection between the west side of the project area to the center of the project area and also provide access around mixed use restriction on FS Road 21 from the Brown Creek-Long Prairie area. This trail would contribute to providing a large riding loop in connection with FS Road 25.
- Designate a trail on the 2516101 and designate two new trails to provide a connection between Fairview Campground and a crossing for State Highway 207. One designated new trail would connect the designated road 2516 and 2516101, the other designated new trail would connect the designate roads 2000350 and 2516102. These three designations would provide a location for crossing of State Highway 207. This combination of routes would also provide a shorter route out of Fairview Campground to the east side of State Highway 207. This is the only alternative to designate this connection between the east and west side of Highway 207. OHV users would be able to leave the OHV Park or Bull Prairie campground and ride on the west half of the

project area without loading their OHVs on to trailers and hauling to a new location to unload.

- Designate an existing trail between 2141020 to 2141040 to validate a current cross country riding loop just north of Collins Butte.
- Designate a new trail between 2142095 and 2500059, connecting the top of the ridge with the Road 25 area.
- The designated trail on the 2128065 and associated trail would be open to OHV use all year. Providing this connection and loop ride throughout the year would provide added recreational opportunities for OHV riders.

### **Views points**

View points would be the same as in Alternative 2.

### **Morrow/Grant County OHV Park Access**

The three connections proposed in Alternative 2 would be the same in this alternative. One new designated trail between the south end of the Morrow/Grant County OHV Park to Road 2307040 would be included under this alternative. This was suggested by OHV Park managers to create additional loops in and out of the OHV Park.

### **Cumulative Effects**

Cumulative effects are the same as described in Alternative 2.

## **Alternative 5**

### **Direct and Indirect Effects**

#### **Loops and Connections**

Alternative 5 eliminates most of the designated trails identified in Alternative 2. The trails designated in Alternative 5 where important riding loops, connections, or destinations that meet a particular route identified during scoping. Ten designated trails were included to create connections to the OHV Park, by pass mixed use restricted roads, or provide access to important view points. Seven areas in the Monument Winter Range include designated trails with seasonal restrictions while still providing access to specific areas. The following designated roads and trails would be included in Alternative 5:

- Designate a trail on road 2141035 to connect roads 2142 and 2141. This connection is important in avoiding Road 21 which is closed to OHV use.
- Designate trails on roads 2142031 and 2142033 as an OHV riding loop.
- The proposed trail in section 25, of T. 7 S., R. 25 E. along with trails proposed in section 31 of T 7 S, R 26 E and sections 6 and 8 of T 8 S, R 26 E would provide a route around road 24 that is closed to OHV use.
- The proposed trail in section 15, T 7 S, R 25 E would provide a connection from Fairview Campground to Road 2000400. This is the only OHV route in and out of Fairview campground.

- Designate a seasonal trail on 2408060 for access above West Bologna Canyon to a high ridge often used as a viewpoint by forest visitors.
- Designate seasonal trails on 2400140 and 2400144 for access to the Bologna Basin area from Ant Hill.
- Designate seasonal trails on 2400218, 2400223 and 2400225. These designated trails are popular riding trails currently being used.
- Designate seasonal trails on 2407046, 2407047 and 2400182 for access to Little Tamarack Mountain and Ant Hill viewpoints.

### Views Points

View points would be the same as in Alternatives 2 and 4.

### Morrow/Grant County OHV Park Access

The same three connections between the Morrow/Grant County OHV Park are proposed as in Alternative 2 with one adjustment. The designated trail on road 2128065 would be shorter by approximately three miles. This trail would connect to a designated new trail to road 2128064. This proposal would allow the route to be open all year instead of closed during rifle hunting season as in Alternative 2. This would create consistency on seasonal trails within the project area. There would be only one seasonal restriction period on designated trails. This seasonal restriction would be within the Monument and Kahler Winter Ranges consistent with Access and Travel Management for the Heppner District.

### Cumulative Effects

Cumulative effects are the same as described in Alternative 2.

### Summary

The total miles of routes designated for OHV use varies by 86 miles between alternatives. All alternatives provide access throughout the project area with specific areas of interest or riding opportunities differing by alternative. Table R-1 shows the type of designated route and miles for comparison of overall OHV use within the project area.

**Table R-1: Miles of designated OHV routes and areas within the West End OHV Project.**

<b>Alternatives</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
Designated roads – open all yr (miles)	189	189	189	189	189
Designated roads - Seasonal	18	18	18	18	18
Designated trails – open all year (miles)	0	46	0	53	13
Designated trails - seasonal (miles)	0	31	0	25	8
Designated new trail – open all year	0	5.5	0	8	5
Designated new trail - seasonal	0	.5	0	0	0
Total Miles Available for OHV Travel	207+	290	207	293	233
Cross country travel-Class I and III OHVs	Yes	No	No	No	No

Alternative 1 has no restriction on loops and connections due to cross country travel occurring throughout the project area. Access to all viewpoints would be possible. Access to the OHV Park would be at the counties discretion as to where they locate trails along the common boundary between the OHV Park and the National Forest.

Alternative 2 provides: a designated trail to Fairview Campground, connections to the Long Prairie area, a riding loop OHV riders are currently using, routes to bypass roads closed to OHVs, access to all view points, and several connections into the OHV Park. Alternative 2 does not provide access across Highway 207 or access between areas north of Long Prairie to areas east and Fairview campground.

Alternative 3 does not provide a connection to Fairview Campground, no connections from the Long Prairie area, no riding loops identified as currently used, no access across Highway 207, provides connections into about 7 miles of designated routes for OHV riders who originate in the OHV Park and access to several viewpoints.

Alternative 4 includes 3 additional miles over Alternative 2. These 3 additional miles provide several loops and connections providing access across the entire project area. Alternative 4 provides: access to Fairview Campground, several riding loops OHV users are currently using, two routes to bypass closed road 21, access out of the Long Prairie area to other riding areas and campgrounds, access across State Highway 207, access to all view points, and the most routes connecting the national forest to the OHV Park.

Alternative 5 eliminated the dead end designated trails in Alternative 2 that did not access a destination. Alternative 5 does have access to Fairview campground, access to bypass the 21 road and the 2128 road, access to all view points, and 4 connections to the OHV Park. Alternative 5 does not provide access across Highway 207, or access between areas north of Long Prairie to areas east and Fairview campground, and eliminates popular riding loops.

## **Non-Motorized Zones**

Another issue that was brought up during scoping was a concern over designating eighty-three miles of Class I and Class III trails for OHV use would unnecessarily reduce the overall potential area available for predominately non-motorized recreational pursuits.

The analysis compares:

- Acres of non-motorized influence in the project area

## **Affected Environment**

The desire for a non-motorized experience was commented on during the scoping process. With cross country travel being allowed in the general forest few acres offer a non-motorized experience when OHVs are present. Motorized use is not consistent in this area and is seasonally dependant. Use is highest during big game hunting seasons followed by holiday weekends, then other weekends and bird hunting seasons.

## **Environmental Effects**

The total acres of motorized influence zone were determined for each Alternative. The motorized influence zone was considered to be the area along a motorized road or trail where the sights, sounds, and presence of motorized vehicles are most likely to be present. While it is recognized

that this is affected by topography, vegetation, and the type and intensity of motorized use this approach attempts to quantify the potential effects on recreational experiences. To quantify the area of influence any area within ½-mile of any designated road or trail was considered to be potentially influenced by motorized access. It is important to remember that OHV use in the project area is not constant but it is expected to continue to increase over time. Areas of motorized influence identified are a possibility and not a certainty.

The figures in each alternative identify areas where non-motorized zones are more than ½ mile away from OHV designated roads or trails. Areas in black are those non-motorized influence zones specific to the Alternative. Areas in gray are included on the map to demonstrate the maximum non-motorized influence area possible due to the cumulative effects of traffic on open roads. The gray area is also the non-motorized influence area under Alternative 3.

## Alternative 1 – No Action

### *Direct and Indirect Effects*

OHVs would have the potential to impact non-motorized users within the same spatial area. Figure 1: Non-motorized influenced zones in Alternative 1 identifies several locations in the southern portion of the project area that would be beyond one half mile from any OHV designated trail or road. Cross country travel in the general forest (E1 Management Area) would have the potential to impact non-motorized users throughout the area.

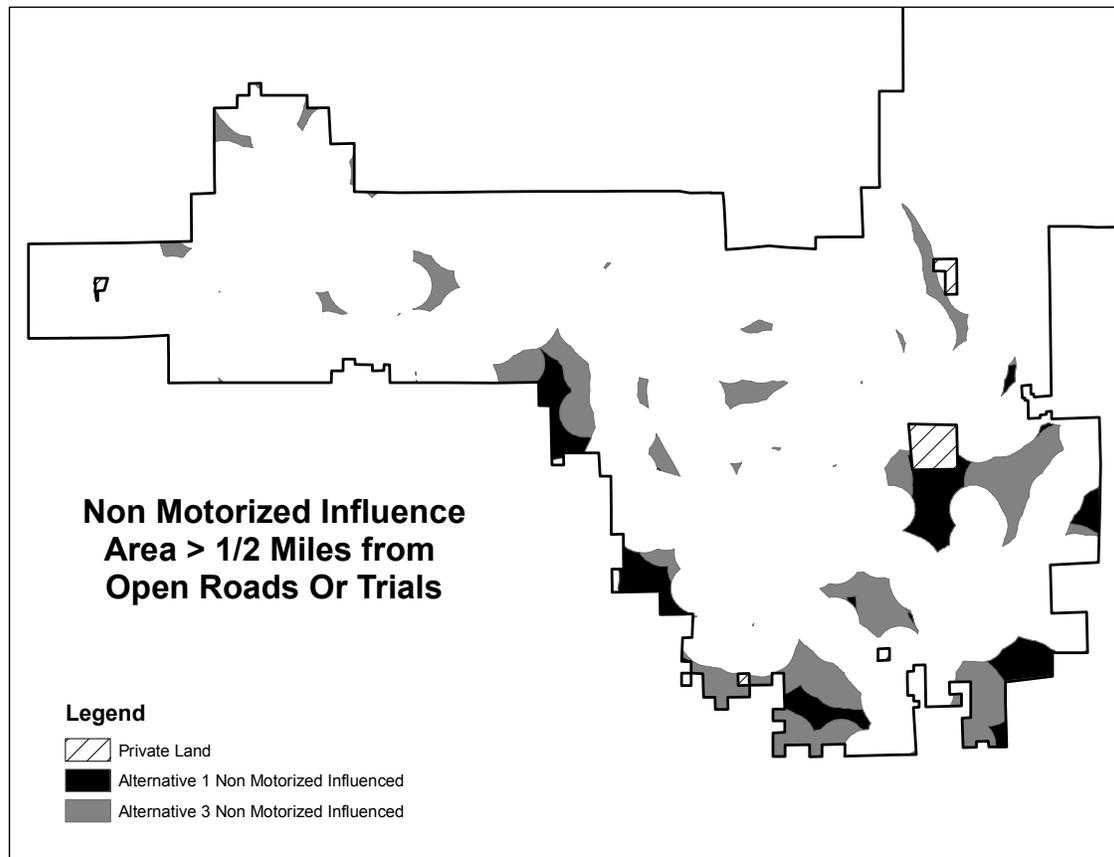


Figure 1: Non-motorized influenced zones in Alternative 1

## Alternative 2 – Proposed Action

### *Direct and Indirect Effects*

Figure 2: Non-Motorized Zone for Alternative 2 identifies areas where non-motorized zones are more than ½ mile away from any designated OHV road or trail. Areas in black are those areas specific to Alternative 2. Areas in gray are included on the map to demonstrate the maximum non-motorized influence area possible due to the cumulative effects of traffic on open roads.

Non-motorized areas are scattered throughout the project with the highest concentration of non-motorized zones along the southern boundary of the project area.

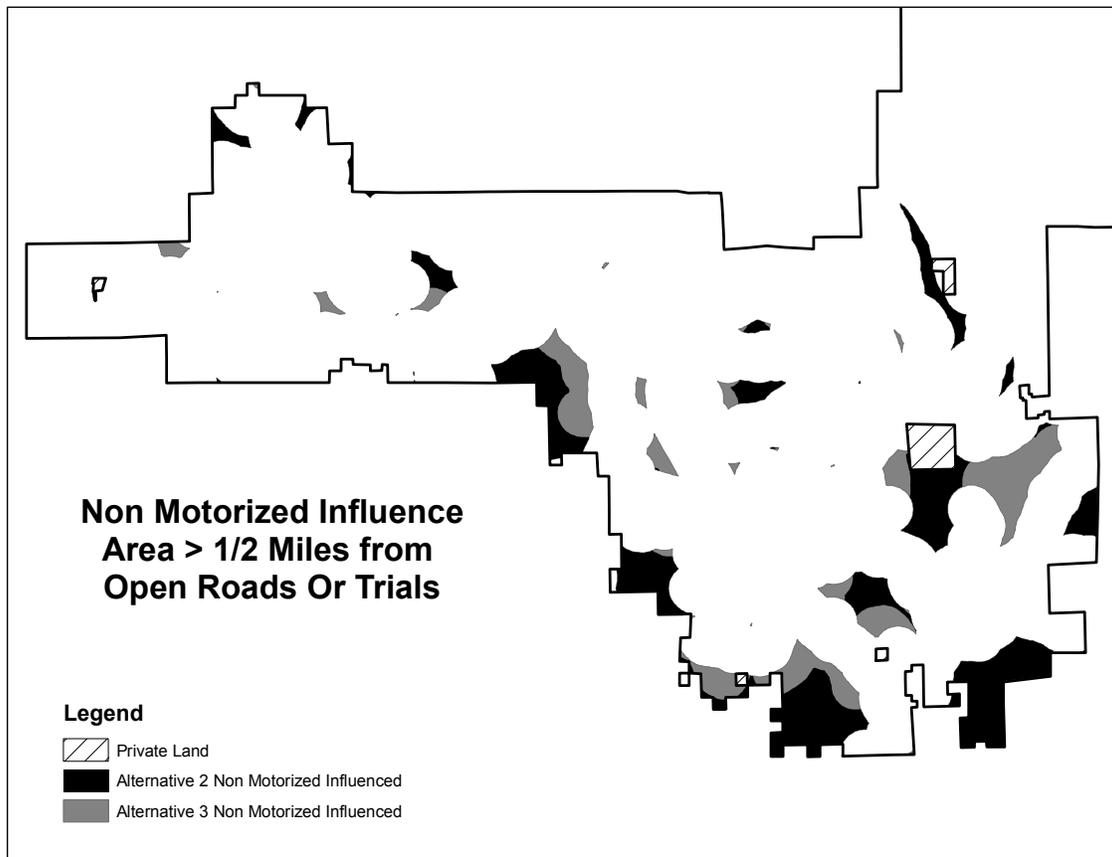


Figure 2: Non-Motorized Zone for Alternative 2

### **Cumulative Effects**

All roads within the project area were included in defining the motorized zone. No additional roads within the project area boundary would affect this zone. Additional motorized influences could be seen or heard from ongoing logging operations such as the Ant Timber Sale, various thinning projects, and future fuels reduction projects such as the Indian Creek Fuels Management project and the Long Prairie Fuels Project and Pre-commercial Thin.

Figure 3: Inventoried Roadless Areas and A1 Non-motorized Dispersed Recreation Management Areas on the Heppner Ranger District. identifies four areas on the Heppner Ranger District that are designated as non-motorized areas. The Texas Butte, Skookum, and Potamus inventoried roadless areas as well as the Non-Motorized Dispersed Recreation A1 Management Area provide over 22,500 acres for those seeking non-motorized recreational opportunities. Designation of OHV trails within the project area would have no effect on these previously identified areas and would not affect the non-motorized recreational opportunities which exist there.

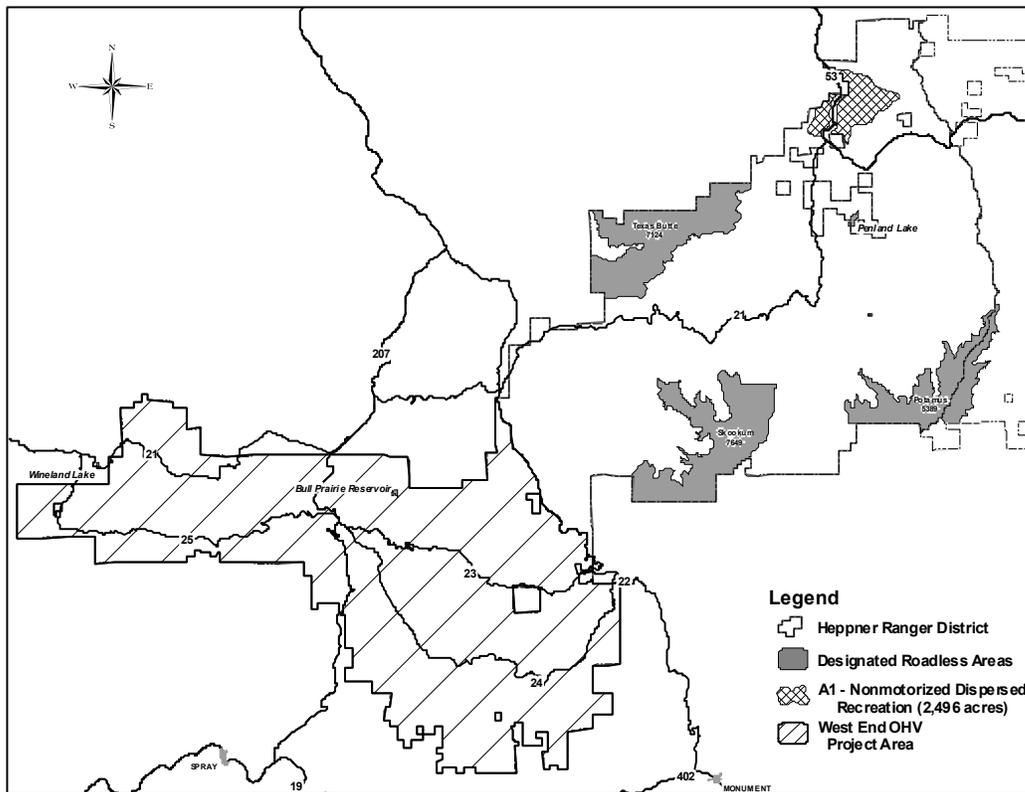


Figure 3: Inventoried Roadless Areas and A1 Non-motorized Dispersed Recreation Management Areas on the Heppner Ranger District.

### Alternative 3

#### Direct and Indirect Effects

This alternative provides the greatest number and largest areas of non-motorized zones. 86 percent of the area would still be influenced by OHVs or other motorized vehicles. By reducing the total miles of designated roads and designated trails for OHV use it would be expected that concentration of OHV users would increase on designated roads resulting in increased occurrence of disturbance within the motorized zone. Figure 4: Non-Motorized Zone for Alternative 3 shows the total possible area of non-motorized influence in the project area. Eliminating cross country travel and not designating trails for OHV use would result in thirteen percent of the project area greater than one half mile from motorized use.

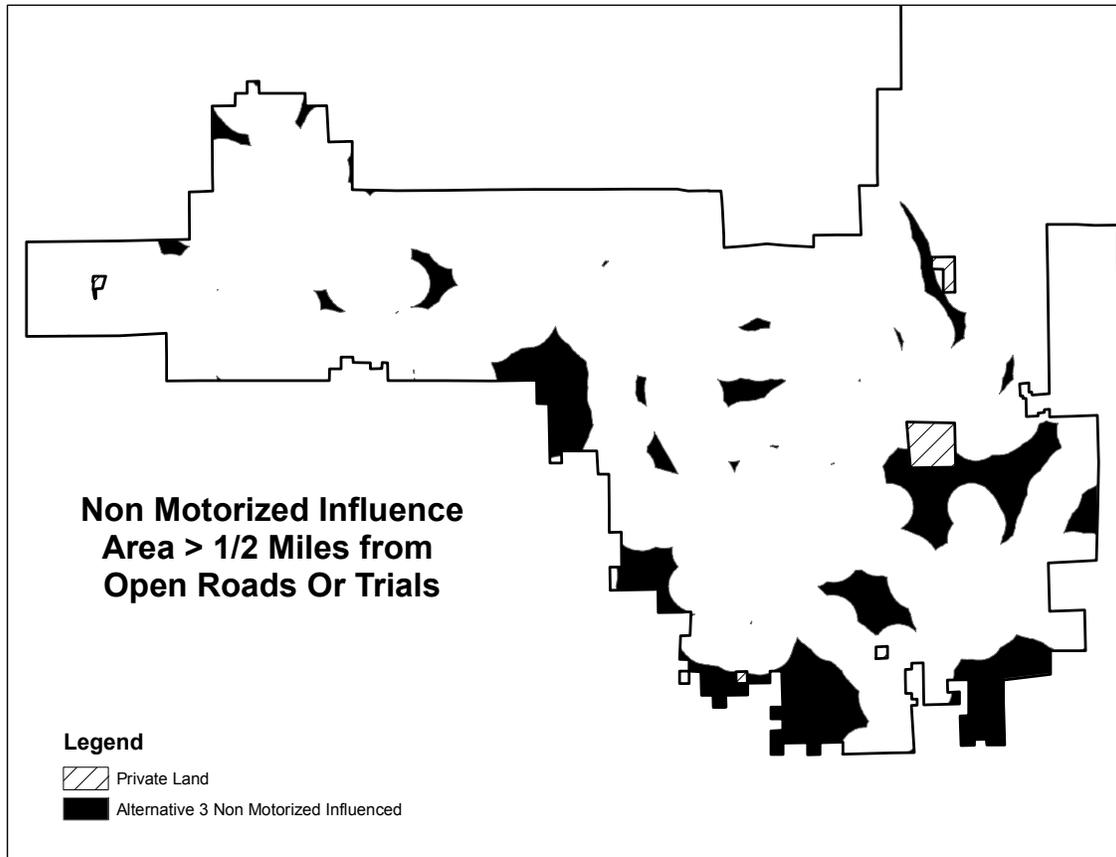


Figure 4: Non-Motorized Zone for Alternative 3

**Cumulative Effects**

Cumulative effects would be the same as is Alternative 2.

**Alternative 4**

**Direct and Indirect Effects**

Alternative 4 is generally the same as alternative 2 with one 69 acre area being added to the motorized influence zone. This added area is associated with designated trail 2100393.

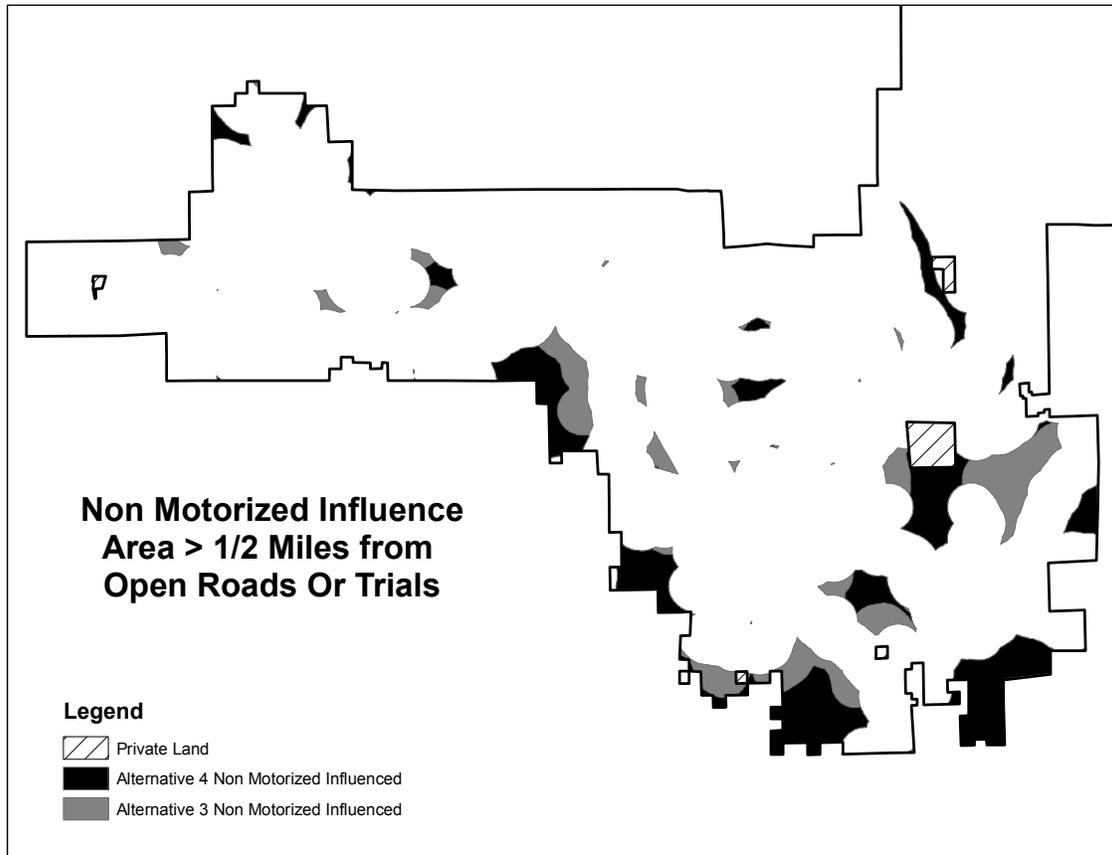


Figure 5: Non-Motorized Zones for Alternative 4

### ***Cumulative Effects***

Cumulative effects would be the same as is Alternative 2.

### **Alternative 5**

#### ***Direct and Indirect Effects***

Alternative 5 increases several large blocks of non-motorized zones. The blocks in the Kahler Winter Range, Little Wilson Creek area, and west of East Bologna are nearly maximized to the non-motorized zone in Alternative 3. Other small additional non-motorized zones occur throughout the project area (see Figure 6: Non-Motorized Zone for Alternative 5). The total area of non-motorized zone in Alternative 5 is 10,893 acres or 12 percent of the project area.

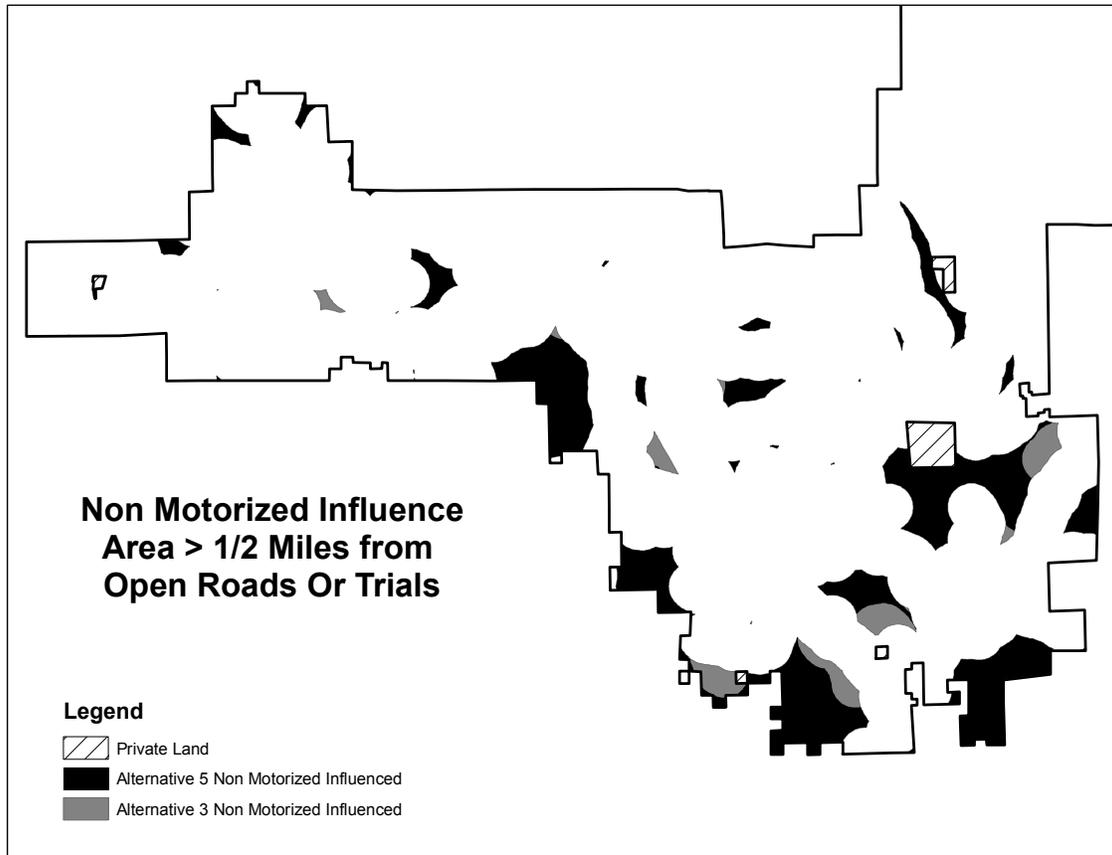


Figure 6: Non-Motorized Zone for Alternative 5

### **Cumulative Effects**

Cumulative effects would be the same as is Alternative 2.

### **Summary**

Alternative 1 provides no areas of non-motorized influence do to the influences of cross country travel. Many, but not all, of the smaller areas identified in Alternative 3 as being non-motorized influence zones are also included in Alternative 5. Most of the larger blocks or areas of non-motorized zones in Alternative 3 are also in Alternative 5 but the blocks or areas included in the non-motorized zones are smaller in Alternative 5. Alternatives 2 and 4 are nearly identical in the size and locations of non-motorized zones with the overall area being less than those areas of non-motorized influence found in Alternatives 3 and 5.

Table R-2 shows the comparison between each alternative by acres of non-motorized influence and miles of closed roads that are available for forest users to use (non-motorized use) without direct OHV interaction.

Table R-2: Non-Motorized Zone Comparisons

	Alternatives				
	1	2	3	4	5
Non-Motorized Influence Zone (acres) (area > 0.5 mile from OHV use)	3,581	7,508	11,634	7,439	10,082
Percent of Acres Not Influenced by Motorized Use	4%	8%	13%	8%	11%
Miles of Closed Roads without Motorized Use	46	145	222	143	201

## Developed Campgrounds

Another issue that was brought up during the scoping process was concerns over OHV use within the Bull Prairie Campground and the availability of campsites for OHV users.

This analysis compares:

- Area within Bull Prairie Administrative site that is accessible to OHVs
- OHV access into Fairview Campground

## Affected Environment

There are two developed campgrounds in the project area.

Bull Prairie Campground is a fee site with 30 campsites, day use area, dump station, boat launch and 4 fishing docks. There is a handicap accessible hiking trail that circles the lake. No motorized vehicles are allowed on this trail. Bull Prairie has a well and water system that provides water to campers. The State of Oregon reviewed its regulation for Bull Prairie Reservoir last year. Bull Prairie Reservoir will continue to be a non-motorized waterway. (Oregon Marine Board (ORS/250-20-125))

Fairview campground is currently a non-fee campground with five campsites and a proposed new outhouse to replace the previous outhouse that was demolished by a falling tree in the winter of 2009. The campground has a spring fed water system that supplies water to campers. This campground outhouse and water supply make it a popular site to stop at as a rest area when traveling.

## Environmental Effects

### Alternative 1 – No Action

#### *Direct and Indirect Effects*

#### **Bull Prairie Campground**

The No Action Alternative allows OHV into Bull Prairie from three areas. See Appendix A, Map 7: *Bull Prairie Campground OHV Access, Alternative 1*.

- To the north directly out of the Morrow/Grant County OHV Park a trail connects to the closed road 2100320 and open road 2000350 in the Wildhorse area.
- To the east Road 2039 connects from the Morrow/Grant County OHV day use area and the Wilson Creek area.
- To the south, Road 2307035 connects from the Grassy Butte/Wall Creek area.

OHVs currently have access to all 30 campsites. OHVs are allowed to ride on the roads within the campground.

### **Fairview Campground**

The No Action Alternative allows OHV into Fairview Campground from cross country travel only. There are no OHV designated roads or trails that lead into the campground. Without a trail system it is difficult to access any extended riding areas.

- The only access road into Fairview campground is State Highway 207, state law prohibits unlicensed OHVs on this road.
- Cross country travel is allowed in the area around the campground.
- OHVs are allowed on the road within the campground.

The No Action Alternative allows OHV users access to all 5 campsites within Fairview Campground.

## **Alternative 2 – Proposed Action**

### ***Direct and Indirect Effects***

#### **Bull Prairie Campground**

Alternative 2 would limit use within the campground but still allow access from parking areas to the campground. See Appendix A, Map 8: *Bull Prairie Campground OHV Access, Alternatives 2, 3, and 5.*

- From north directly out of the Morrow/Grant County OHV Park the closed road 2100320 and open road 2000350 would allow riders a place to park OHVs and within walking distance of the campground.
- From the south, Road 2307035 connects into the Grassy Butte/Wall Creek area. The gate on 2307035 would be the limit for OHVs access. This would still provide walking access to the campground and lake area.

All paved roads within the administrative site and the campground area would restrict OHVs. OHVs would not be allowed to operate at any campsites.

#### **Fairview Campground**

- Alternative 2 proposes a designated new trail from Fairview Campground connecting into the 25 road system. This would provide OHV access from the campground into the area west of Highway 207.
- State law will continue to prohibit unlicensed OHVs on State Highway 207.

- Cross country travel to access the campground would be eliminated.

Alternative 2 allows OHV users access to all 5 campsites within Fairview Campground.

### **Cumulative Effects**

Other camping areas near the project area include the Morrow/Grant County OHV Park, and dispersed campsites throughout the Heppner Ranger District. The Morrow/Grant County OHV Park has 35 campsites and 8 cabins available for overnight camping. Dispersed sites throughout the Heppner Ranger District would be accessible by OHVs as well as any other vehicle.

Other activities occurring on the forest such as timber sales, vegetation management projects, planting and fencing contracts or other contracted work would not affect the availability of developed campsites. There are no other management activities planned in the project area that would affect campground availability.

Based on the 2004 National Visitor Use Monitoring the primary use of the Umatilla National Forest is hunting, followed by relaxing and fishing. Forest visitors are likely to occupy campground sites either in the developed campgrounds or dispersed sites within the project area when using the forest for any of these activities. Receipts from Bull Prairie Campground show that the campground is generally at 40 to 70 % capacity on any given weekend. Two exceptions are Memorial weekend and mid-July. During these two periods the campground is at 90 percent capacity. Use at Fairview campground is generally low. The highest use period is during rifle season. OHV users may find campsites limited during high use periods.

## **Alternative 3**

### **Direct and Indirect Effects**

#### **Bull Prairie Campground**

In Bull Prairie Alternative 3 would be the same as Alternative 2.

#### **Fairview Campground**

- The only access into Fairview campground is State Highway 207, state law prohibits unlicensed OHV on this road.
- OHVs are allowed on the road within the campground.

Although OHV users would have access to all 5 campsites within Fairview Campground they would not have access out of the campground. OHV users would be required to load and haul OHVs to designated roads.

### **Cumulative Effects**

Cumulative effects would be the same as Alternative 2.

## Alternative 4

### *Direct and Indirect Effects*

#### **Bull Prairie Campground**

Alternative 4 would increase OHV use within the campground over Alternative 2 but reduce access over what is currently allowed. Access routes would be the same as in Alternative 2 but would increase access into a portion of the campground sites.

- From north directly out of the Morrow/Grant County OHV Park: the designated trail 2100320 and designated road 2000350 would extend into the North Campground.
- From the south: designated road 2307035 would extend into the south campground.

OHVs would be restricted in the main portion of the campground. OHV users would not be allowed to operate OHVs at sites 1 thru 9 and 12 thru 24. The campsites at the north and south end of the campground would allow campers with OHVs to ride out of these campsites onto other designated roads and trails. The north campsites would tie into road 2039 road and connect to the Morrow/Grant OHV Park. The south campground would connect into road 2307035 and into the Grassy Butte/Wall Creek area. This alternative allows campers riding OHVs access to and from 6 campsites. OHVs would be restricted from 22 sites and the boat launch area.

#### **Fairview Campground**

Access into Fairview Campground would be the same as Alternative 2. Two additional designated routes north of the campground would increase access to the designated road and trail system.

- Alternative 4 proposes to add 2516101 as a designated route and designated two new routes to complete connections between the east and west sides of Highway 207. This would provide greater access to Fairview Campground from various riding areas and designated routes.
- A crossing is proposed across Highway 207 connecting Roads 2516102 and 2000350. This would connect Fairview to the east side of Highway 207, and the Morrow/Grant County OHV Park.

Access to the campsites would be the same as Alternative 2.

### ***Cumulative Effects***

Cumulative effects would be the same as Alternative 2.

## Alternative 5

### *Direct and Indirect Effects*

#### **Bull Prairie Campground**

Alternative 5 would be the same as Alternative 2.

## Fairview Campground

Alternative 5 would be the same as Alternative 2.

## Cumulative Effects

Cumulative effects would be the same as Alternative 2.

## Summary

### Bull Prairie

Alternative 1 would provide full access to campsites and would only limit OHV use on Road 2039 coming into Bull Prairie Campground from Highway 207. In Alternatives 2, 3 and 5 Bull Prairie Campground would have more restrictions to OHVs within the campground allowing use only from parking areas and not within the campground. Alternative 4 would allow access to and from campsites in the north and south campground (6 sites) but not within the main campground.

### Fairview

Alternative 1 would allow cross country access into Fairview campground but would not have any roads or trails to provide identified routes to designated trail systems. In Alternative 2 and 5 would designate a new trail to connect the campground into the 25 road system. Alternative 4 would also designate this trail and an additional trail to create a connection across Highway 207 providing OHV access to the Morrow/Grant County OHV Park and designated roads and trails east of the highway. Alternative 3 would allow no riding out of Fairview Campground. All alternatives allow OHV use within the campground.

## Wildlife Habitat

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This section incorporates by reference the Wildlife Specialist Report and Biological Evaluation contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of the affected environment and predicted effects of the alternatives are discussed here.

## Management Indicator Species

### Rocky Mountain Elk

*Issue: Designating additional routes for OHV use beyond what is currently open to full size vehicles would perpetuate adverse effects on wildlife.*

*This analysis compares:*

- Habitat Effectiveness Index for Rocky Mountain Elk
- Habitat acres of OHV influence within ½ mile of trails

## Affected Environment

Currently, the winter elk population is below management objectives set by the State of Oregon for the Heppner Unit and below objectives in the north Fossil Unit (the area west of Highway 207). The Oregon Department of Fish and Wildlife (ODFW) has expressed concern over the level of

motorized disturbance in the analysis area, and its impact on their ability to manage the elk herd, particularly in the Fossil Unit (the area west of State Highway 207).

The big game habitat effectiveness model (USDA 1990, Appendix C) is used to predict the influence of forest management on elk and other big game species. It is intended to be a relative measure of effectiveness, and does not consider many factors (such as weather, predation, disease, hunting, harvest, etc) that would influence the “actual number” of elk found in an area.

Under the West End OHV Project, only one of the three habitat variables used to calculate the Habitat Effectiveness Index would be affected. No vegetative treatment or manipulation would occur that would impact the quality, size, or distribution of existing cover stands. Only the measure of open road density within the analysis area would be affected under the No Action and the Action Alternatives. In the calculations below (Table W-03), all roads (open and closed) are considered open in the existing condition due to the fact that cross country travel is permitted. This includes the winter range area, which was not specifically included in the area where cross country OHV travel is permitted in the 1992 Access and Travel Management Plan.

The Umatilla Forest Plan (1990) establishes standards and guidelines for elk habitat for many of the management areas on the Forest. The analysis area includes portions of two Forest Plan Management Areas that have standards for big game habitat: C3 (Winter Range) and E1 (Timber and Forage). The Monument Winter Range is the largest winter range (approximately 61,000 acres) on the Forest. It spans nearly the entire southern boundary zone of the Heppner Ranger District to the furthest west extent of the North Fork John Day Ranger District. The Kahler Winter Range is approximately 3,000 acres in size. The remainder of the analysis area is primarily E1 habitat. The E1 management area was broken along Highway 207 into an east and west portion. This represents a logical break within the E1 area, and corresponds with the Wildlife Management Unit boundary identified by the State. The Fossil unit lies west of Highway 207, while the Heppner unit lies to the east. Table W-01 compares the Forest Plan standards with the current condition of elk habitat in the analysis area.

**Table W-01. A comparison of HEI for Rocky Mountain elk habitat in the West End OHV analysis area.**

	Forest Plan Standard	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
C3 Monument Winter Range	70	62	63	63	63	63
C3 Kahler Winter Range	70	55	65	65	65	65
E1 West – Fossil Unit	30	44	50	52	50	51
E1 East – Heppner Unit	30	53	57	59	57	58

Under the current condition, HEI and satisfactory cover standards are not being met in either winter range. Low satisfactory cover levels in the C3 winter range are a result of the limited capability of the hot dry and warm dry biophysical environments (those generally lying within the winter range) to produce and sustain satisfactory cover, large tracts of grassland habitat, past management activities, and recent wildfire (2007 Monument Complex Fire). The existing habitat effectiveness in the winter range is not consistent with the Forest Plan standard which states "Elk habitat will be managed on designated big game winter ranges to achieve a habitat effectiveness index of no less than 70, including discounts for roads open to motorized vehicular traffic" as described in Thomas (1979). HEI is currently below Forest Plan standards for the same reasons that satisfactory cover is below standards. HEI standards are being met in both the east and west portions of the E1 management area.

Recent research indicates that roads and off road recreation influence the distribution of big game (Rowland et al. 2004, Rowland et al. 2000, Wisdom et al. 2004). Elk generally avoid roads that are open to motorized traffic. The energy expenditure related to avoidance or fleeing from off road activity and road-related disturbance can reduce the body condition of elk and ultimately reduce the probability of surviving the winter (Cook et al. 2004). In addition to HEI, a proximity analysis of open roads (open to OHVs and/or pickups) to elk habitat (forage, marginal, and satisfactory cover) will be used to analyze the effects of the various action alternatives on elk and elk habitat. Because cross country travel is permitted in the analysis area, there are technically no refuge areas for big game that are distant from potential OHV or other motorized disturbance. In reality, some areas are inaccessible to OHVs, and do provide refuge areas for big game. Due to the difficulty involved in identifying these areas, they have not been quantified.

## **Environmental Effects**

### **Alternative 1 – No Action**

#### ***Direct and Indirect Effects***

In the short term, the quantity and quality of elk habitat would remain unchanged. Cross country OHV travel would be permitted in general forest under this alternative. In the E1 west area (Fossil Unit) and E1 east area, the density of roads available to OHV use would remain 4.2 and 3.2 miles per square mile, respectively, and cross country travel would continue. The No Action Alternative is consistent with the Forest Plan because OHV use would be restricted to designated routes within the C3 Winter Range (LRMP pg 4-152). This alternative would also restrict motorized vehicle use during the winter use period (December 1 through April 15) to reduce disturbance on wintering elk (LRMP 1-153). OHV use would only be permitted on year-round open roads and seasonally open roads. OHV use would not be permitted on any closed road within the winter range. Although currently below standards, there would be no reduction in HEI through implementation of this alternative. However, due to the difficulty distinguishing the ambiguous boundary between winter range and general forest, cross country OHV travel would likely continue in the winter range. Cross country travel would continue to cause disturbance to big game foraging and cover habitat. Forage and cover habitat adjacent to roads used by OHVs would continue to be under utilized in both the winter range and general forest due to disturbance and displacement associated with OHV use. Due to the fact that refuge areas would be virtually non-existent, elk would continue to be displaced to lands outside the National Forest boundary. This would be especially true in the E1 west area (Fossil unit) due to the high density of roads accessible to OHVs and the gentle

topography and relatively open vegetation types that facilitate cross country OHV use in this area. For these reasons, HEI would remain the same as that described in the existing condition. Elk would continue to expend energy avoiding or fleeing from off road activity and road-related disturbance within the analysis area (Cook et al. 2004). These responses to OHV use, both on and off road, would impact body condition of elk by reducing energy stored for the winter, lactation, and gestation, and reducing the probability of surviving the winter in a similar manner as is currently occurring under the existing condition. Productivity and survival of elk would likely continue to be lower in the E1 management areas (east and west) and the C3 winter ranges than areas where cross country OHV travel is not allowed.

## **Alternatives 2, 3, 4, and 5**

### ***Direct and Indirect Effects***

Under all 4 of the action alternatives, HEI would increase in the C3 (Monument and Kahler winter ranges) and E1 (east and west) management areas as a result of restricting OHVs to designated routes (open roads and trails). Refer to Table W-01 for HEI values under each of the alternatives. Improvement in HEI indicates that the elk habitat within the analysis area would be more effective in terms of optimizing use of the project area. In this case, the improvement in the total HEI in the E1 and C3 management areas is solely due to reductions in the density of roads used by motorized vehicles and disturbance associated with this activity. Reduced disturbance, through elimination of cross country travel and the designation of routes open to OHVs would improve the quality of available general forest and winter range habitat. Because these alternatives would improve HEI and reduce disturbance during critical periods, they would be consistent with direction provided in the Forest Plan for the C3 and E1 management areas.

Prohibition of cross country travel would result in cover patches that would provide security or refuge areas for big game. For the purposes of this analysis, 0.5 miles was used to buffer open system roads and designated trails under each of the alternatives in order to identify areas with low motorized vehicle-related disturbance. Research indicates that elk respond to motorized vehicles by avoiding cover and foraging areas adjacent to open roads (Rowland et al. 2000, Rowland et al. 2004). In those areas greater than 0.5 miles from an open road or trail, big game would be less likely to respond to the sound of vehicle use on roads, and utilize available habitat. The action alternatives would result in a greater proportion of the available habitat within the Kahler and Monument winter ranges and the E1 west (Fossil unit) and E1 east (Heppner unit) areas being utilized by elk. Refer to Table W-02 for the results of the West End OHV Project road proximity analysis.

**Table W-02. Road Proximity Analysis (Acres > 0.5 miles from open roads or designated OHV trails within the project area)**

<b>Monument Winter Range</b>				
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Forage	2,648	3,534	2,648	2,958
Marginal cover	1,673	2,855	1,673	2,134
Satisfactory cover	7	34	7	31
Total security acres	4,328	6,423	4,328	5,123
<b>Kahler Winter Range</b>				
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Forage	668	1,116	668	1,102
Marginal cover	307	575	307	575
Satisfactory cover	1	21	1	21
Total security acres	976	1,712	976	1,698
<b>General Forest, Fossil Big Game Unit</b>				
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Forage	199	290	192	213
Marginal cover	275	426	217	425
Satisfactory cover	5	39	0	39
Total security acres	479	755	409	677
<b>General Forest, Heppner Big Game Unit</b>				
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Forage	565	959	565	879
Marginal cover	1,086	1,664	1,086	1,585
Satisfactory cover	63	107	63	107
Total security acres	1,714	2,730	1,714	2,571

<b>Total acres of elk habitat &gt; 0.5 miles from motorized routes within the project area</b>				
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Monument Winter Range – C3	4,328	6,423	4,328	5,123
Kahler Winter Range – C3	976	1,712	976	1,698
Fossil Unit – E1	479	755	409	677
Heppner Unit – E1	1,714	2,730	1,714	2,571
Total security habitat acres	7,497	11,620	7,427	10,069

Under the existing condition, all of the cover and forage stands within the analysis area are subject to motorized disturbance due to cross country OHV travel. The action alternatives would provide cover and forage patches that lie greater than 0.5 miles from a route open to motorized use. These areas are considered security areas, and provide refuge areas where elk are less likely to be impacted by motorized vehicle use. Alternative 3 would have a greatest reduction in vehicle-related disturbance when compared to the other action alternatives, based on the fact that more acres of forage and cover (primarily marginal cover) distant from open roads would be available for big game under this alternative. A total of 11,620 acres greater than 0.5 miles from routes and trails open to motorized use would be provided under this alternative. When compared to Alternative 3, Alternative 5 would result in fewer acres of forage and cover (approximately 800 acres less cover and 750 acres less forage) greater than 0.5 miles from a designated route or trail (refer to Table W-02). A total of 10,069 acres of security habitat would be provided under this alternative. Alternative 2 and 4 would have very similar outcomes in relation to the road proximity analysis. Alternatives 2 and 4 would create approximately 7,500 and 7,400 acres of security area (cover and forage), respectively. While these alternatives create cover and foraging areas at least 0.5 miles from open routes, they would provide approximately 1,500 fewer acres of cover and 1,100 fewer acres of forage habitat that would provide security habitat when compared to Alternative 5. Because open road densities in the E1 west area (Fossil hunting unit) are relatively high, the observed improvement (increased acres of cover and forage >0.5 miles from a designated route) between alternatives is relatively small (754 acres difference between alternatives).

By reducing disturbance associated with OHV use and cross country travel, these alternatives have the potential to positively impact the body condition of elk within the analysis area. Under these alternatives, less energy would be expended avoiding or fleeing from off road activity and road-related disturbance during the summer and fall. As a result, stored energy would be available for gestating and lactating cows during the spring and fall, and to sustain elk through the critical winter period (Cook et al. 2004). Although the proposed action alternatives (except Alternative 3) would maintain a portion of the closed road system for OHV use and construct new trail, there would be a net reduction in the number of miles of road and trail available to OHVs and disturbance associated with OHV use. As a result, it is expected that the proposed action alternatives would not reduce existing elk populations or reduce elk population viability in the analysis area.

Creation of new trails is expected to have minimal impacts on big game; some routes already exist and are being used. New routes would be designed to reduce disturbance and avoid dense forested habitats that may be used for hiding cover. Elk in the vicinity of new trails would likely move away from these routes when they are being used due to the noise created by OHVs. Because OHV use would be intermittent, elk would likely use habitat adjacent to new trails and designated trails (closed roads) when they are not being used. No new designated trails (construction of new trails) would occur in the winter range. Trail construction would generally not impact overstory vegetation due to the width of the proposed trails; a narrow strip of understory vegetation would be removed along the routes to provide for a trail with approximately a 50-inch tread width.

Alternatives 2, 3, 4, and 5 would all improve the quality of elk habitat in the analysis area. By eliminating cross country OHV travel and creating refuge areas, elk would be more likely to stay on the Forest during hunting season, rather than being displaced to adjacent private land. The

Oregon Department of Fish and Wildlife's ability to meet elk management objectives in the Heppner and Fossil units would be improved as a result.

### **Cumulative Effects**

Past and future activities and events in the analysis area that affected elk and elk habitat include timber harvest (including Rimrock, Bologna Basin, and Sunflower Bacon vegetation management projects), existing roads, road closures (Access and Travel Management) and OHV management, and wildfire. Timber harvest has affected forest structure and composition, altering the cover habitat in the analysis area. Timber harvest has also fragmented habitat, creating a mosaic of forested stands and man-made openings. Conversely, foraging habitat for big game increases in response to harvest. Road construction associated with timber harvest increased road densities and disturbance within the analysis area. Increased open road densities increase the vulnerability of elk to hunting. Research has found that they tend to select for habitats further away from open roads (Rowland et al. 2000). More recently, road closures associated with access and travel management activities on the south end of the Umatilla National Forest have reduced road densities. The road density in the Monument winter range is currently quite low (approximately 0.8 miles open road per square mile). This road density includes all roads (open, seasonal, and closed roads) due to the fact that cross country travel is occurring in the winter range. Access and Travel Management planning also permitted cross country travel within the analysis area. OHV management within the analysis area has reduced refuge areas and increased disturbance associated with OHVs. The 1992 ATM Plan also authorized wood cutting and linear travel to dispersed campsites within 300 feet of open roads. Because these activities occur adjacent to open roads that elk tend to avoid, the impacts to elk are considered minor. Wildfire within the analysis area (and the Monument winter range) has impacted elk habitat. Large wildfires like the Monument Complex Fire (2007) and the Wheeler Point Fire (1996) burned at high intensity in portions of the analysis area, reducing cover habitat for elk. Past activities have resulted in the current condition of elk habitat in the analysis area.

Present activities, actions, and events that affect elk and elk habitat include timber harvest and OHV use on and off the forest. Timber harvest is currently occurring within both winter range and general forest habitats within the analysis area. This activity impacts both the quality and quantity of cover habitat within the analysis area. Current OHV management is having the same impacts as those described in the previous section; however, due to the increase in OHV use since the 1992 ATM Plan was implemented, the magnitude of these impacts is much greater today than what occurred in the past. Development of the Morrow-Grant OHV Park has also contributed to increased use in that portion of the Forest adjacent to the Park. Where OHV use is greatest (near connections between the Park and National Forest System lands, elk have likely been displaced to areas with lower disturbance, further from these routes.

The East Fork Indian Fuels project and the Long Prairie Fuels project have the potential to impact elk habitat by making elk more visible through reduction of low level screening vegetation and converting cover habitat to forage. Due to the size of the proposed treatment area, it is expected that these projects would not adversely impact elk. The District-Wide Pre-Commercial thinning project may also impact hiding cover for elk in past plantations; retention of higher stem densities adjacent to open roads and clumps within units would reduce impacts to elk.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would

be no cumulative reduction in the elk population within the analysis area. The proposed action alternatives would result in a reduction in disturbance and vulnerability through the elimination of cross country travel and identification of designated routes and trails.

## Summary

Under Alternative 1 disturbance in the winter range would decrease compared to the existing condition. HEI would stay the same in the E1 management area and improve in the C3 management area. This alternative would be consistent with the forest plan standard for HEI.

Under Alternative 2 disturbance to big game would be reduced through the creation of forage and cover patches greater than 0.5 miles from designated routes (see Table W-02); however, the size of these patches would be among the lowest (second only to Alternative 4) when compared to the other action alternatives. HEI would improve in all two management area allocations under this alternative (refer to Table W-01). HEI would improve in the C3 and E1 management areas. For this reason these alternatives would be consistent with the Forest Plan. Disturbance during the critical winter use period, calving season, and the summer would be reduced.

Under alternative 2, approximately 6 miles of designated trail would be closed from September 15 to December 1. The closure period of this OHV trail would roughly approximate the beginning and ending of firearms hunting for big game (deer and elk). Closure during this period would reduce disturbance in an area known to provide security cover for big game. In relation to the road proximity analysis, the effects of Alternative 2 would be virtually the same as those of Alternative 4.

Under Alternative 3 disturbance to big game would be reduced the most under this alternative. The most acres of refuge areas would be created through route closures under this alternative. HEI would also have the greatest improvement under this alternative in the four management area allocations that were analyzed (see Table W-01).

In terms of the road proximity analysis, Alternative 3 would create the most refuge and foraging areas distant from roads open to motorized use. In terms of the action alternatives, this alternative would result in the greatest improvement in the distribution of elk and utilization of available habitat.

Alternative 4 would have the least improvement in terms of OHV-related disturbance and vulnerability of big game when compared to the other action alternatives. This alternative would include a designated new trail that would provide access from the east end of the analysis area to the west end of the analysis area. Potentially, use of the designated routes west of Highway 207 would increase due to improved connectivity to the Morrow/Grant County OHV Park. Activities associated with this alternative would have the same impacts on HEI as those described under Alternative 2.

In terms of the road proximity analysis, alternative 4 would create the least refuge and foraging areas distant from roads open to motorized use.

Under Alternative 5 disturbance to big game would be reduced considerably under this alternative when compared to the no action alternative. HEI would also be improved under this alternative in all analyzed management area allocations (refer to Table W-02). This improvement would be between Alternatives 2 and 3.

Alternative 5 would provide refuge and foraging areas distant from open roads on slightly fewer acres than Alternative 3.

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## Primary Cavity Excavators, Pileated Woodpecker, Northern Three-toed Woodpecker

### Affected Environment

Primary cavity excavators (PCE) include bird species that create holes for nesting or roosting in live, dead, or decaying trees. They also provide secondary cavity users such as owls, bluebirds, and flying squirrels habitat for denning, roosting and/or nesting.

In general, habitat for primary cavity excavators consists of dead and/or dying trees and downed wood in various size classes and stages of decay. Habitat can occur in a variety of vegetative communities with various structural conditions (Thomas 1979). Existing and suitable habitat can be found throughout the analysis area, except for non-forest areas and forest stands in the process of regeneration (stand initiation, and stem exclusion).

Preferred habitat (foraging and nesting) for the pileated woodpecker includes dense moist forest types (mixed conifer) in late seral stages with a high density of dead/downed wood habitat (Marshall et al. 2003, USDA 1990). Stands generally include large diameter (>21" dbh) snags and downed wood (USDA 1990 and Bull and Holthausen 1993). In general, this habitat occurs in the mid and upper elevations of the analysis area in small scattered patches. Larger patches are available on the east end of the analysis area.

Preferred habitat for the northern three-toed woodpecker includes late successional, cold/moist forest types (lodgepole/mixed conifer) with high standing-wood density, and burned stands (Marshall et al. 2003). This habitat occurs in scattered patches within the Wheeler Point Fire (1996) area. Due to the age of the fire and natural snag-fall, there are currently few suitable habitat acres within the analysis area. There are no C2 management areas within the analysis area being managed to provide suitable habitat for this species.

### Environmental Effects

#### Alternative 1 – No Action

##### *Direct and Indirect Effects*

Current OHV use is not impacting suitable habitat for these species. Snags and green trees are not being affected by cross country travel or use of closed roads by OHVs.

#### Alternatives 2, 3, 4, and 5

##### *Direct and Indirect Effects*

Under all of the action alternatives, there would be no measurable impact on primary cavity excavator species including the pileated woodpecker and the Northern three-toed woodpecker. The proposed activities do not include vegetative treatment of stands that may provide habitat for these species. Construction of new trails may impact a very small number of green trees and snags where they cannot be avoided. This impact would be negligible in terms of impacts to suitable habitat. Habitat features (snags and green trees) located along designated routes and trails would not be impacted by management activities. Snags that have fallen across designated

routes and trails would be cut out of the way by users or agency personnel; however, logs cut out of trails would remain on-site.

### ***Cumulative Effects***

The proposed activities would have no direct or indirect impacts on these species or suitable habitat for primary cavity excavators. Because there would be no direct or indirect impacts on these species or suitable habitat, there would also be no cumulative impacts on these species and their habitat.

## **American Marten**

### **Affected Environment**

Preferred habitat for the American marten includes late successional, moist forest types (mixed conifer) near developed riparian areas with high downed wood densities, generally above 4,000 feet in elevation (Ruggiero et al. 1994). This species depends mainly on small mammals such as red-backed voles, squirrels, and snowshoe hare for food. In the winter, the marten forages beneath the snow in downed wood for prey. This species has not been observed in the analysis area. Using current GIS data, there are approximately 8,176 acres of suitable denning habitat and 22,453 acres of suitable foraging habitat within the project area. All of these habitat acres are considered secondary, lower quality habitats due to vegetative composition and structure and elevation.

### **Environmental Effects**

#### **Alternative 1 – No Action**

##### ***Direct and Indirect Effects***

The effects of this alternative would be the same as those currently occurring in the analysis area. Cross country travel would continue within the general forest portion of the analysis area. Disturbance in American marten habitat patches within the analysis area would continue. In addition to allowing cross country OHV travel, this alternative would allow OHV access on approximately 3 miles of closed road within Dedicated Old Growth stands that are potentially suitable to the American marten.

#### **Alternatives 2, 3, 4, and 5**

##### ***Direct and Indirect Effects***

The proposed activities would not directly impact individual martens or alter the composition or structure of suitable American marten habitat in the analysis area. Under all of the action alternatives, cross country OHV travel would be prohibited, reducing disturbance in potential habitat. The action alternatives would reduce the area accessible to OHVs, reducing potential disturbance to the marten. Refer to Table W-03 for the miles of designated trail and new trail that would occur within suitable American marten habitat under Alternatives 2, 3, 4, and 5. If present, American marten may avoid trails when they are in use; however, research indicates that marten readily cross narrow forest roads (Hargis and McCullough 1984). OHV use of trails would be intermittent. Marten would be expected to use habitat adjacent to trails when OHVs are absent.

Under Alternatives 2, 4, and 5 new designated trails would occur within suitable American marten habitat. New trail construction would not impact the suitability of American marten habitat because vegetative structure and composition would not be affected. The potential for impacts to this species are very small due to the fact that it is not known to occur in the analysis area and there would be no impact on potential habitat.

**Table W-03. Miles of designated trails and new trails lying within American marten habitat**

Miles of Trail	Foraging Habitat				Denning Habitat			
	Alt 2	Alt 3	Alt 4	Alt 5	Alt 2	Alt 3	Alt 4	Alt 5
Designated Trail	19.8	0	20.1	5.0	7.5	0	7.8	2.2
New Trail	1.3	0	1.7	1.0	0.5	0	0.5	0.5

Construction of new OHV trails would not occur in Dedicated Old Growth (management area C1) stands potentially used by this species.

### ***Cumulative Effects (all action alternatives)***

Past activities, actions, and events that have affected American marten habitat include timber harvest and insect and disease outbreaks. Timber harvest has occurred in suitable American marten habitat. This activity altered stand structure and composition, created openings in the forest canopy, and fragmented habitat. These harvested acres are in varying stages of recovery. Snag and downed wood (used for denning) densities were also impacted by harvest. Snags and downed wood were removed from harvest units or in many cases, piled and burned. Insects and disease outbreaks also impacted suitable habitat by reducing canopy closure below levels preferred by this species. These past activities, actions, and events have combined to create the existing condition of suitable American marten habitat in the analysis area.

The proposed Long Prairie Fuels project has the potential to affect approximately 70 acres of denning habitat within the project area. These acres may no longer be considered suitable following treatment.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no cumulative change in pine marten habitat.

### **Summary**

The proposed activities would not impact overstory canopy structure, composition or downed woody material potentially used by this species for denning or foraging. The proposed action alternatives would not convert suitable habitat to an unsuitable condition, would eliminate disturbance associated with cross country OHV use and reduce disturbance associated with OHV use of closed roads by designating routes. It is not expected that marten populations (if present in the analysis area) or population viability would be negatively impacted under any of the action alternatives.

Alternatives 2 and 4 would have virtually the same impacts. Under these alternatives, there would be approximately 28 miles of designated trail and 2 miles of new trail within suitable American marten habitat where disturbance could occur. Approximately 0.2 miles of closed roads within C1

old growth units open to OHVs. When compared to the other 2 action alternatives, these alternatives would have the least positive impact (in terms of reduced motorized disturbance) on suitable American marten habitat.

Alternative 3 would prohibit OHV use on all closed roads within the analysis area. For this reason, this alternative would have the greatest positive impact on potential American marten habitat with regards to motorized disturbance.

The impacts of Alternative 5 would be similar to those described under Alternative 3. This alternative would prohibit OHV use on all but 21 miles of designated trails and 5 miles of new designated trail within the analysis area. For this reason, this alternative would have a greater positive impact on potential American marten habitat with regards to motorized disturbance than Alternatives 2 and 4.

This level of designated routes in all action alternatives would be consistent with Forest Plan direction for the C1 management area.

## Threatened, Endangered, Proposed, Candidate, and Sensitive Species

Five species listed on the Regional Forester's sensitive species list and one species listed on the *US Fish and Wildlife Service Threatened and Endangered Species List* either occurs in the project area or suitable habitat occurs within the project area. Other species either on the Regional Forester's Sensitive List or the US Fish and Wildlife Services Threatened and Endangered Species List were eliminated from further effects analysis. Rational for the elimination from in-depth effects analysis can be found in the Wildlife Specialist's Report located in the project file.

**Table W-04. Federally ESA listed and Region 6 Sensitive Species with a potential to occur on the Umatilla National Forest.**

Species	Listing	No Action	Alternatives 2, 3, 4, & 5
California wolverine <i>Gulo gulo</i>	Sensitive	No Impact <sup>1</sup>	No Impact
Columbia spotted frog <i>Rana luteiventris</i>	Sensitive	May Impact <sup>2</sup>	No Impact
Northern Bald Eagle <i>Haliaeetus leucocephalus</i>	Sensitive	May Impact	No Impact
Lewis' woodpecker <i>Melanerpes lewis</i>	Sensitive	No Impact	No Impact
White-headed woodpecker <i>Picoides albolarvatus</i>	Sensitive	No Impact	No Impact
Gray wolf <i>Canis lupus</i>	Endangered	No Effect <sup>3</sup>	No Effect

<sup>1</sup> No Impact to R6 sensitive species individuals, populations, or their habitat

<sup>2</sup> May impact individuals or habitat, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species.

<sup>3</sup> No effect on a proposed or listed species or critical habitat.

## California Wolverine - Sensitive

### Affected Environment

The wolverine prefers high elevation, conifer forest types, with limited exposure to human interference (Ruggiero et al. 1994, The Wolverine Foundations (TWF) 2008). Natal denning habitat includes open rocky slopes (talus or boulders) surrounded or adjacent to high elevation forested habitat that maintains a snow depth greater than 3 feet into March and April (Ruggiero et al. 1994, TWF 2008). The wolverine is an opportunistic scavenger, with large mammal carrion the primary food source year-round. While foraging, they generally avoid large open areas and tend to stay within forested habitat at mid and high elevations (>4,000') and typically travel 18-24 miles to forage (Ruggiero et al. 1994, TWF 2008).

Snow tracking surveys conducted on the District in the 1990s, for wolverine, fisher, American marten, and lynx have resulted in one suspected set of wolverine tracks (February 18, 1994) approximately 15 miles northeast of the analysis area along the 2105 Road. The quality of these tracks was poor (melted out and poor snow conditions), so positive identification was impossible. Suitable denning habitat is not present in the project area. Using current GIS, there are approximately 68,000 acres of suitable foraging habitat in the project area, based on vegetative composition and stand structure. All of these acres are considered lower quality habitat. The wolverine has not been observed in the analysis area, and is not currently known to occur in the analysis area.

### Environmental Effects

#### Alternative 1 – No Action

##### *Direct and Indirect Effects*

There would be no change in potential wolverine foraging habitat within the analysis area due to the fact that no vegetative treatment is proposed. Cross country travel would continue in those areas where potential foraging habitat occurs (higher elevation general forest habitat), so there would be no change in the existing level of disturbance in the project area.

#### Alternatives 2, 3, 4, and 5

##### *Direct and Indirect Effects*

Under all of the action alternatives, there would be no direct or indirect impacts on this species. The wolverine is not currently known to occur on the District or Forest. There would also be no change in foraging habitat suitability. Disturbance associated with OHV use (cross country travel and on closed system roads) would be reduced under all of the action alternatives (2, 3, 4, and 5). Use of designated or new trails within wolverine foraging habitat has the potential to cause disturbance in the immediate vicinity of these routes. Refer to Table W-05 for the miles of designated trails and new trails within wolverine foraging habitat. Due to the fact that the wolverine is not known to occur in the area, and the chance of a wolverine passing through the area very

small, and new trail construction would not impact the suitability of foraging habitat, there would be no impact to this species.

**Table W-05. Miles of designated trails and new trails lying within wolverine habitat.**

Miles of Trail	California Wolverine Foraging Habitat			
	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Designated Trail	57.3	0	58.5	15.2
New Trail	4.8	0	5.9	3.7

### **Cumulative Effects**

Past activities, actions, and events that affected California wolverine habitat include timber harvest, wildfire, road construction, and road closures associated with Access and Travel Management. Past timber harvest practices are still apparent in some areas within the analysis area. This activity has resulted in fragmentation of habitat; openings created by these activities would be avoided by foraging wolverine. Wildfire has also affected the structure and composition of suitable wolverine habitat. High and moderate severity fire converted suitable wolverine foraging habitat to an unsuitable condition. Road construction associated with timber harvest has resulted in increased disturbance and fragmented suitable foraging habitat. Road closures associated with Access and Travel Management planning reduced disturbance in suitable habitat. These past activities, actions, and events have combined to create the existing condition of wolverine habitat in the analysis area.

The Long Prairie Fuels project has the potential to affect suitable wolverine habitat on a small number of acres (approximately 70) within the project area. These acres would not be considered suitable following treatment. The East Fork Indian Fuels project also has the potential to affect suitable wolverine habitat.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no cumulative reduction in suitable habitat for this species. The proposed activities would not alter vegetative structure in suitable wolverine habitat. Although disturbance would increase in the area immediately adjacent to new trails, there would be a net reduction in disturbance through limiting OHV access on closed roads and eliminating cross country OHV use.

### **Summary**

Disturbance in foraging habitat is relative to the miles of designated trails in each alternative as shown in table W-05. Alternative 4 has the greatest miles of routes with alternative 3 having the least miles. Significance of the difference in miles is minimal.

### **Determination and Rationale (Alternatives 1, 2, 3, 4 and 5)**

The proposed activities under these alternatives would have no impact on the California wolverine. The rationale for this determination is as follows:

- The California wolverine is not known to occur in the analysis area. No suitable natal denning habitat is present in the analysis area. For these reasons, there would be no direct impacts on this species.

- The proposed activities (eliminating cross country travel, road closures, and trail construction) would not impact the suitability of suitable wolverine habitat.
- Although newly constructed trails would result in OHV related disturbance, there would be a net reduction in disturbance due to associated road closures. Although a portion of new trails is located within suitable habitat, trail construction would not impact the vegetative structure and composition of suitable foraging habitat and the potential for disturbance very low.

## **Columbia Spotted Frog - Sensitive**

### **Affected Environment**

The Columbia spotted frog frequents waters and associated vegetated (grassy) shorelines of ponds, springs, marshes, and slow-flowing streams and appears to prefer waters with a bottom layer of dead and decaying vegetation (NatureServe Explorer 2008, Csuti et al. 1997, Corkran and Thoms 1996). They typically occur between 150 and 8,000 feet in elevation (Corkran and Thoms 1996). Spotted frogs breed in the spring in shallow water at pond edges, stream margins, and in inundated floodplain areas (Corkran and Thoms 1996). Springs may be used as over-wintering sites for local populations of spotted frogs.

The Columbia spotted frog is known to occur in the analysis area. Surveys in 2006 located Columbia spotted frogs in several ponds adjacent to the 2307 road and in a tributary to Porter Creek. Although there have been no observations elsewhere in streams and ponds in the upper and middle elevations within the E1 management area, this species is assumed present due to the presence of suitable habitat. Larger streams would likely be used by adults during the summer. Marshy areas along these streams could be used for breeding during the spring. Perennial stock ponds in the analysis area would be considered suitable breeding habitat for the Columbia spotted frog.

### **Environmental Effects**

#### **Alternative 1 – No Action**

##### ***Direct and Indirect Effects***

This alternative would prohibit cross country travel in the C3 management area. Suitable habitat is not present in this portion of the analysis area. The remainder of the suitable and occupied spotted frog habitat in the analysis area would continue to be affected by cross country OHV travel. Stream crossings, ponds, and springs would potentially be affected; there is a potential for direct mortality of adults, subadults, and tadpoles at these locations.

#### **Alternatives 2, 3, 4, and 5**

##### ***Direct and Indirect Effects***

The impacts of each of the action alternatives would be similar to one another. The elimination of cross country travel would reduce the potential for direct and indirect impacts to this species and suitable/occupied habitat. All new trail construction would occur outside of Riparian Habitat Conservation Areas; therefore, there would be no direct effects on this species or potentially

occupied habitat. Use of OHVs on closed roads would not impact this species; no suitable or occupied breeding habitat is located along these routes under any of the action alternatives.

### **Cumulative Effects**

Past activities that affected suitable spotted frog habitat include cattle grazing, timber harvest, aspen restoration, and gravel pit/pond construction. Past cattle grazing affected suitable habitat by altering the structure and composition of riparian communities. Riparian habitat quality was adversely impacted by historic grazing. Grazed habitats are currently recovering from past overgrazing. Past cattle grazing also created suitable breeding habitat through the creation of water sources (ponds) where they previously did not exist. Past timber harvest occurred within and adjacent to riparian habitat in the allotment. These activities resulted in disturbance to riparian habitats, a reduction in stream shading, and reduced habitat quality. Rock pit ponds created by road construction associated with timber harvest increased available habitat for the spotted frog in upland areas. Aspen restoration activities (fencing, planting, etc.) have improved riparian habitat condition. These past activities have combined to create the existing condition of suitable spotted frog habitat in the analysis area.

Present activities in the project area include livestock grazing and aspen restoration. Current cattle grazing is occurring at relatively low stocking levels within the analysis area, when compared to historical grazing. Cattle grazing is not adversely affecting suitable spotted frog habitat in the analysis area. Direct impacts to spotted frogs are considered negligible. Aspen restoration activities will improve riparian habitat condition in the future.

Reasonably foreseeable future activities in the project area include cattle grazing, aspen restoration, and maintenance of water sources. Future cattle grazing and aspen treatments are expected to have the same effects as those described above. Maintenance of water sources has the potential to affect breeding sites and cause mortality of developing tadpoles and froglets. These effects would not persist beyond the year in which pond cleaning occurs.

When the expected effects of this alternative are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be no cumulative negative impact on suitable spotted frog habitat or populations.

### **Determination and Rationale (No Action)**

This alternative may impact individuals or habitat for the Columbia spotted frog, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. This determination is based on the following:

- Spotted frogs are present in the analysis area.
- There is a potential that continued cross country OHV use would impact individual spotted frogs at potential breeding sites.

### **Determination and Rationale (All Action Alternatives)**

Alternatives 2, 3, 4, and 5 would have no impact on the Columbia spotted frog and its habitat. The rationale for this determination is as follows:

- The spotted frog is present in the analysis area.
- No proposed trail construction would occur in RHCAs.

- All of the action alternatives would reduce potential impacts on this species by eliminating cross country OHV travel and reducing OHV activity in riparian areas.

## **Bald Eagle - Sensitive**

### **Affected Environment**

Preferred habitat for the northern bald eagle occurs near large bodies of water (rivers, lakes, etc.) that supports an adequate food supply (NatureServe Explorer 2008 and USDI 1986). In the Pacific Northwest recovery area, preferred nesting habitat for bald eagles is predominately uneven-aged, mature, coniferous stands (ponderosa pine and Douglas-fir) or large black-cottonwood trees along riparian corridors (NatureServe Explorer 2008 and USDI 1986). Eagles usually nest in mature conifers with gnarled limbs that provide ideal platforms for nests. The nest tree is characteristically one of the largest in the stand and usually provides an unobstructed view of a body of water (USDI 1986). In Oregon, the majority of nests are within 0.5 miles of the shoreline (Anthony and Isaacs 1989). Important prey species include fish, birds, mammals, and carrion. (NatureServe Explorer 2008 and USDI 1986).

Bald eagle winter foraging habitat is present in the southern portion of the analysis area. Bald eagles are commonly noted along the North Fork John Day River between the months of November and March. A bald eagle nest is present in the analysis area in the Ant Hill/Dry Creek area. This nest has been active every year since it was discovered in 1994; fledging 20 young in the 15 years that monitoring has occurred. A Management Plan was prepared for this nest in 1999 (Van Winkle 1999). This plan was designed to meet or exceed the guidelines for bald eagle management in the Recovery Plan for the Pacific Bald Eagle (USDI 1986). It also meets the requirements of the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act, and Endangered Species Act.

### **Environmental Effects**

#### **Alternative 1 – No Action**

##### ***Direct and Indirect Effects***

This alternative would prohibit cross country travel in the C3 management area, reducing the potential for OHV use off of roads to disturb foraging or nesting bald eagle. However, due to administrative and enforcement difficulties, cross country OHV travel would likely continue to some degree in the winter range. The US Fish and Wildlife Service has determined that in open country where there is increased visibility and exposure to noise, OHV use should occur no closer than 200 meters (660 feet) from a bald eagle nest (USDI 2007). There is a potential that cross country OHV use could occur in close proximity (<200 meters) to the Dry Creek bald eagle nest. If OHV use occurred within 200 meters of the nest, it would be expected to be infrequent and short in duration due to poor access and the topography adjacent to the nest. This would not be consistent with the Management Plan for the Dry Creek Bald Eagle Nest Site (Van Winkle 1999). Past production at the nest (fledging 20 young in 15 years) indicates that OHV use in the immediate vicinity of the nest, if it occurred, did not appreciably reduce productivity, cause nest abandonment, or injury to the eagles.

**Cumulative Effects**

There are no present or reasonably foreseeable future activities in the analysis area that are or have the potential to disturb bald eagles at the nest site. Cross country OHV use would likely be reduced in the winter range under this alternative. It is expected that use in the winter range would continue to some degree due to management and enforcement issues. The potential for OHV use in close proximity (<200 meters) to the Dry Creek bald eagle nest would also be reduced as a result. Because potential motorized use would be reduced adjacent to the nest, cumulative impacts would be reduced under this alternative. There is also a small potential for non-motorized recreation activities within the vicinity of the nest to disturb the pair for relatively short periods of time. Potential impacts would depend on the duration of the activity in question; slower, longer duration activities such as walking would tend to disturb this species. However, it is unlikely that non-motorized recreation would reduce productivity of the nest, result in nest abandonment, or injure the eagles at the nest site.

**Alternatives 2, 3, 4, and 5****Direct and Indirect Effects**

Disturbance would be reduced to foraging or nesting bald eagle. These alternatives would have a positive impact on the bald eagle and its habitat. Under all of the action alternatives, year-round closed roads and seasonally closed roads in the winter range would also not be open to OHV use during the winter use period (December 1 – April 15), further reducing potential disturbance. Designated trails within the winter range (use allowed between April 15 and November 30) are located away from the Dry Creek bald eagle nest, and would not impact foraging or nesting bald eagle. Designated trails in the general forest portion of the analysis open to OHV use throughout the year would not impact the bald eagle because eagles would be unlikely to use these areas during the non-breeding season.

**Cumulative Effects**

Because the proposed activities under Alternatives 2, 3, 4, and 5 would not disturb or otherwise impact bald eagle foraging or nesting habitat, there would also be no cumulative impacts on this species under these alternatives.

**Determination and Rationale (Alternative 1)**

Alternative 1 may impact individuals or habitat for the bald eagle, but would not contribute to a trend towards federal listing or cause a loss of viability to the population or species. This determination is based on the following:

- The bald eagle is present in the southern portion of the analysis area. The Dry Creek Bald eagle nest is also located within the winter range portion of the project area.
- There would be no impact on the suitability of nesting or foraging habitat.
- Cross country travel would likely continue in the winter range. OHV use in close proximity (within ¼ mile) has the potential to disturb bald eagles during the nesting season. Potential disturbance associated with cross country OHV use in this portion of the project area would not agitate or bother eagles to a degree where they would be injured, experience reduced productivity, or abandon the nest. If OHV use occurred

within  $\frac{1}{4}$  mile of the nest, it would be infrequent and short in duration due to poor access and the topography adjacent to the nest. Under the existing condition, the Dry Creek nest has fledged 20 birds in the last 15 years; this level of productivity indicates that existing OHV use in the analysis area is not adversely affecting productivity of the nest. For these reasons, this alternative would be consistent with the Bald and Golden Eagle Protection Act (USDI 1940).

### **Determination and Rationale (Alternatives 2, 3, 4, and 5)**

Alternatives 1, 2, 3, 4, and 5 would have no impact on the bald eagle or its habitat. The rationale for this determination is as follows:

- The bald eagle is present in the southern portion of the analysis area.
- There would be no impact on the suitability of nesting or foraging habitat.
- Cross country travel would be eliminated in the winter range under all of the alternatives, reducing the potential for disturbance during the period when eagles are present.
- Designated trails (closed roads open to OHV use) are located in areas where their use would not disturb this species.
- These alternatives would be consistent with the Bald and Golden Eagle Protection Act (USDI 1940) because the proposed activities would not agitate or bother eagles to a degree where they would be injured, would not result in nest abandonment, and are not expected to impact productivity of the nest. These alternatives would also be consistent with the site-specific management plan for the Dry Creek nest.

## **White-headed Woodpecker and Lewis' Woodpecker – Sensitive**

### **Affected Environment**

The white-headed woodpecker is listed as a Region 6 Sensitive Species. It is also a Management Indicator Species in the Umatilla National Forest Land and Resource Management Plan (USDA 1990). The white-headed woodpecker differs from many of the other primary cavity excavators identified as MIS in the Forest Plan in its near exclusive selection of mature, single-stratum ponderosa pine dominated habitats. The white-headed woodpecker is present on the Heppner Ranger District.

The Lewis' woodpecker is listed as a Region 6 Sensitive Species. It is also a Management Indicator Species (MIS) on the Umatilla National Forest. The Lewis' woodpecker is typically associated with open ponderosa pine woodland habitat near water. They have also been associated with stand replacement fires (5 to 10 years post-fire). The Lewis' woodpecker has been observed in the analysis area.

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## Environmental Effects

### Alternative 1 – No Action

#### ***Direct and Indirect Effects***

The activities proposed under this alternative would have no direct or indirect impact on this species. Large diameter snags and green trees and late and old structure ponderosa pine habitats would not be affected under this alternative. Because there would be no direct or indirect impacts on this species and its habitat, there would also be no cumulative impact on this species.

### Alternatives 2, 3, 4, and 5

#### ***Direct and Indirect Effects***

Under all of the action alternatives, there would be no measurable impact to this species or its habitat. The proposed activities do not include vegetative treatment of stands that may provide habitat for this species. Under all of the action alternatives (except for Alternative 3), new trail construction would occur. Construction of these trails may impact a very small number of green trees and snags where they cannot be avoided. Habitat suitability would not be altered by the proposed trail construction activities. The potential loss of individual green trees and snags would have a negligible impact on habitat quality. Habitat features (snags and green trees) located adjacent to designated new trails would not be impacted during construction or maintenance activities.

#### ***Cumulative Effects***

Because there would be no direct or indirect impacts on this species and no reduction in suitable habitat, there would also be no cumulative impact on this species under Alternatives 2, 3, 4, and 5.

#### ***Determination and Rationale (Alternatives 1, 2, 3, 4, and 5)***

The proposed activities under Alternatives 1, 2, 3, 4, and 5 would have no impact on the white-headed and Lewis' woodpeckers or suitable habitat for these species. The rationale for this determination is as follows:

- The white-headed and Lewis' woodpeckers are likely present in the analysis area.
- Habitat suitability would not be impacted by the proposed activities.
- Impacts to individual large diameter snags and green trees would be negligible; they would be avoided where possible during trail construction.

## Gray Wolf - Endangered

### Affected Environment

Habitat preference for the gray wolf is prey-dependent rather than cover-dependent. The wolf is a habitat generalist inhabiting a variety of plant communities, typically containing a mix of forested and open areas with a variety of topographic features (Verts and Carraway 1998). Wolves are strongly territorial, with territory size and location strongly related to prey abundance. Wolves prey mainly on large ungulates, such as deer and elk, and to a lesser extent on small mammals. The

gray wolf prefers areas with few roads, generally avoiding areas with an open road density greater than one mile per square mile (NatureServe Explorer 2008). Natal dens typically occur as underground burrows, but can also be caves or other types of shelter. Rendezvous sites are generally open areas. A radio-collared gray wolf dispersed to the Blue Mountains from Idaho in March 1999, and was captured approximately 30 miles southeast of the analysis area and relocated to Idaho. Currently, wolves have been confirmed present on the northern portion of the Forest. The Idaho wolf population has been increasing steadily, and dispersal into the southern Blue Mountains is expected to continue in the future.

Numerous unconfirmed sightings of gray wolves have occurred on the District in the past several years. Habitat for this species occurs throughout the analysis area; due to open road densities, the majority of habitat within the general forest portion of the analysis area is considered marginal. This species is not currently known to occur in the analysis area or District.

## **Environmental Effects**

### **Alternative 1 – No Action**

#### ***Direct and Indirect Effects***

The elimination of cross country travel in the winter range would improve the quality of suitable habitat within the analysis area. Elsewhere in the analysis area, cross country travel would continue; the chance of a wolf moving into the analysis area and remaining would be very low due to the current and expected level of disturbance associated with OHV and other motorized use.

### **Alternatives 2, 3, 4, and 5**

#### ***Direct and Indirect Effects***

The gray wolf is not known to occur in the analysis area; therefore, the proposed activities would not directly or indirectly impact this species. Under all of the action alternatives, cross country travel would be eliminated, improving potential habitat quality within the analysis area by reducing disturbance. Newly constructed trails would be located in previously roaded areas, and would not affect the likelihood of a wolf entering the area and remaining. Although the proposed action alternatives (except Alternative 3) would maintain a portion of the closed road system for OHV use and construct new trail, there would be a net reduction in the number of miles of road and trail available to OHVs and disturbance associated with OHV use.

Although potential habitat quality would be improved through a reduction in disturbance, open road densities would continue to exceed 1 mile per square mile through the analysis area after implementation. Because the gray wolf prefers habitat with road densities less than 1 mile per square mile (generally), the analysis area would continue to provide lower quality potential habitat for the gray wolf.

The proposed action alternatives are expected to improve habitat for potential prey by reducing road-related disturbance and vulnerability. As a result, it is expected that the proposed action alternatives would not reduce existing elk populations or reduce elk population viability in the analysis area. As a result, the prey base in the analysis area would continue to be adequate to support potential wolves if they were to move into the area.

### **Cumulative Effects**

Past activities and events in the analysis area that affected suitable gray wolf habitat include timber harvest, road construction, road closures, and OHV management activities (Access and Travel Management planning). Timber harvest has affected forest structure and composition, reducing the amount of cover habitat in the analysis area. Conversely, the amount of foraging habitat for big game has increased in response to past harvest. Road construction associated with timber harvest increased road densities and disturbance within the analysis area, making the area less suitable for gray wolf. More recently, road closures associated with access and travel management activities on the south end of the Umatilla National Forest have reduced open road densities. Conversely, ATM planning also allowed for cross country OHV use west of the Sunflower Flat (22) Road, resulting in disturbance and reduced refuge areas distant from open roads. Past activities have resulted in the current condition of gray wolf habitat in the analysis area.

There are no ongoing or reasonably foreseeable future activities, actions, and events with a potential to affect wolf habitat in the analysis area.

When the expected effects of these alternatives are combined with the residual and expected effects of past, present, and future actions, activities, and events in the analysis area, there would be a cumulative reduction in disturbance associated with motorized vehicles. Under all of the action alternatives, the number of acres greater than 0.5 miles from an open road would increase, although the resulting open road and trail densities would provide marginally suitable gray wolf habitat. The proposed activities would also positively impact elk and mule deer habitat and potentially populations through a reduction in vulnerability during the hunting seasons and improve habitat effectiveness.

### **Determination and Rationale (Alternatives 1, 2, 3, 4, and 5)**

Under all of the action alternatives, there would be no effect on the gray wolf. The rationale for this determination is as follows:

- The gray wolf is not currently known to occur in the analysis area or on the District.
- No denning or rendezvous sites have been identified on the District; therefore, there would be no impact on these habitats.
- Habitat suitability and quality would be maintained or improve through the elimination of cross country travel.
- Although new trail construction would occur in 3 of the 4 action alternatives, these trails would be located in previously roaded areas; when combined with the elimination of cross country travel and designation of routes open to OHVs, there would be a net reduction in the total number and density of routes or areas open to OHV use and a reduction in disturbance under Alternatives 2, 3, 4, and 5.

### **Species of Interest**

These are species that are of interest to the public at the local or regional level, or were identified as a species of concern by the Fish and Wildlife Service. Table W-06 lists the species of interest that could occur in the analysis area, based on observations or the presence of suitable habitat.

Table W-06. Species of Interest in the West End OHV Analysis Area

Common Name	Scientific Name	Oregon Status (2008)
Northern goshawk	<i>Accipiter gentilis</i>	Sensitive-Critical
Olive-sided flycatcher	<i>Contopus cooperi</i>	Sensitive-Vulnerable
Long-eared myotis	<i>Myotis evotis</i>	Sensitive-Undetermined Status
Long-legged myotis	<i>Myotis volans</i>	Sensitive-Undetermined Status
Yuma myotis	<i>Myotis yumanensis</i>	None

## Northern Goshawk

### Affected Environment

Preferred habitat for the goshawk consists of coniferous forests with a mosaic of structural stages. Nesting sites typically consist of a dense cluster of large trees, surrounded by a similar forest type with a more open overstory. The understory is relatively open and the nest site is generally situated within one-quarter mile of a stream or other water source. The best foraging habitat occurs in a mosaic of structural stages scattered across the landscape. Existing research indicates that a mix of dense canopy forest and more open, younger stands that provide protection and access to abundant prey, including those characteristic of both dense and more open habitat types, are selected for in post-fledging areas (Reynolds et al. 1992, Daw and DeStefano 2001, Wiens et al. 2006). Research indicates that there is a potential for disturbance of nesting and foraging goshawk to occur when nests or foraging occurs adjacent to roads (Gaines et al. 2003). Impacts are greatest closer to roads, where sight distances and noise levels are generally greatest (Richardson and Miller 1997). Research also indicates that foot traffic (hiking, etc.) causes disturbance at greater distances (when further away) than vehicle traffic due to the time required for the disturbance to pass by (Richardson and Miller).

Current GIS indicates that there are currently approximately 10,627 acres of suitable nesting habitat within the project area, based on vegetative structure and composition. There are also approximately 51,778 acres of suitable foraging habitat in the project area.

### Environmental Effects

#### Alternative 1 – No Action

##### *Direct and Indirect Effects*

Continuation of cross country travel in the analysis area would continue to have the potential to disturb nesting goshawk. There would be no impact on stand structure or composition.

## Alternatives 2, 3, 4, and 5

### **Direct and Indirect Effects**

Under all of the alternatives, there would be no impact on stand structure or composition; therefore, there would be no direct or indirect impacts on the quantity and quality of habitat for this species. No new trail construction would occur in late and old structure habitat that would potentially be used for nesting; therefore use of newly constructed trails would not cause disturbance to nesting goshawk. Some new trails are located in suitable foraging habitat; trail construction would not impact the suitability of goshawk foraging habitat.

Use of designated routes (closed roads and newly constructed trail) has the potential to cause short term disturbance to goshawk. Due to the intermittent nature of trail riding, and the fact that passing OHVs would enter and leave potential foraging habitat relatively quickly (when compared to foot traffic), it is not expected that foraging goshawk would avoid the area adjacent to designated routes, or experience population level impacts. If goshawk were flush and move away from a designated route, they would be expected to return once the disturbance has passed. With regard to the existing closed road system, disturbance would be reduced under all action alternatives through elimination of cross-country travel and variable reductions in the quantity of closed roads available for OHV use. Fewer miles of closed road would be available to OHVs under all of the action alternatives (zero to 78 miles of designated trail rather than 221 miles, depending on the alternative), reducing the potential for disturbance to northern goshawk. Based on the miles of designated trails within or near nesting habitat Alternative 3 would have the greatest reduction in disturbance followed by Alternatives 5, 2, and 4.

### **Cumulative Effects**

Past activities and events in the watershed that affected northern goshawk habitat include timber harvest. Past harvest affected the structure and composition of forested habitats and the distribution of late and old structure stands in the analysis area. Past harvest reduced old forest structural stages and high overstory canopy closure desired for nesting. Harvest activities have created a patchwork of structural stages across the landscape, increasing foraging areas for goshawk. The Monument Complex and Wheeler Point Fires affected suitable goshawk habitat. Past activities have resulted in the current condition of goshawk habitat in the analysis area.

The proposed Long Prairie Fuels Reduction project has the potential to affect 70 acres of nesting and foraging habitat. There are no ongoing activities proposed in the analysis area that would affect or have the potential to affect the goshawk or its habitat.

When the effects of this alternative are combined with the residual and expected effects of past, present, and future activities in the analysis area, there would be no additional reduction in suitable habitat for this species. Potential disturbance associated with cross country travel and OHV use would be reduced under all of the action alternatives.

## **Olive-sided Flycatcher**

### **Affected Environment**

Preferred habitat for the flycatcher consists of coniferous forest associated with openings and edges near water (streams and wet areas) (Marshall et al. 2003). This includes burned areas with

snags and scattered tall, live trees, riparian zones, edges of late and early-successional forests, and open or semi open forest stands with low canopy cover (Marshall et al. 2003). Tall, prominent trees and snags, which serve as foraging and singing perches, are a common feature of nesting habitat (Marshall et al. 2003). Preferred habitat occurs in riparian corridors within the analysis area. The species has not been documented in the analysis area; it is presumed present because preferred habitat is present in the analysis area.

## **Environmental Effects**

### **Alternative 1 – No Action**

#### ***Direct and Indirect Effects***

Impacts under this alternative would be similar to what is currently occurring. It is expected that riparian habitat would continue to be affected in both the general forest and the winter range.

### **Alternatives 2, 3, 4, and 5**

#### ***Direct and Indirect Effects***

Elimination of cross-country OHV travel under all of the action alternatives would reduce disturbance and damage to riparian habitats used by this species. New trail construction would not occur in riparian habitats or measurably impact the availability of large trees and snags potentially used as perches.

#### ***Cumulative Effects***

The proposed activities would not directly or indirectly impact this species or its habitat; therefore, there would also be no cumulative effects on this species and its habitat.

## **Bats of Interest**

### **Affected Environment**

Bats associated with cave or cave like dwellings (mines, buildings, etc.) for hibernation or roosting (maternity or day/night roost) are not included in this assessment because the analysis area does not provide these habitat features. Available habitat for bats in the analysis area includes dry upland and moist upland forest types that may be associated with water. Forest dwelling bats often use large-diameter snags with exfoliating bark as roosts. They may also use rock crevices as day or night roosts.

Potential roost habitat (large-diameter snags with exfoliating bark) for forest bats occurs throughout the analysis area. In general, bats have not been specifically surveyed (mist-net or bat detection devices) within the analysis area. Although some bats may be rarer in the Blue Mountains than others, some species have the potential to occur in the project area. For example, Whitaker et al. (1981) considered the long-eared bat to be “the most abundant bat in northeastern Oregon forests.” While the Yuma myotis was considered “exceeding scarce” in eastern Oregon (Whitaker et al. 1981). The following species will be assessed as a group and not individually: long-eared myotis, long-legged myotis, and Yuma myotis. These three species are year-long residents in the analysis area.

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## Environmental Effects

### Alternative 1 – No Action

#### ***Direct and Indirect Effects***

The availability of potential roosting habitat (large snags with exfoliating bark) would not be impacted by the proposed activities under this alternative. No trail construction or other activities with a potential to impact snags and green trees would occur under this alternative. There would also be no impact on other forms of hibernacula (caves, rock crevices, etc) through implementation of this alternative.

### Alternatives 2, 3, 4, and 5

#### ***Direct and Indirect Effects***

Because these species use standing dead wood for roosting in forested landscapes, impacts can be inferred through impacts to this habitat feature. New trail construction would occur under alternatives 2, 4, and 5. Although snags and live trees would be avoided during trail layout where possible, there is the potential that a small number of snags and green trees may be impacted by trail construction. In terms of snag availability, this impact would be negligible, and would not impact these species.

#### ***Cumulative Effects***

Past activities and events in the watershed that affected bat roosting habitat include timber harvest, wildfire, wildfire salvage, and personal use firewood cutting. Timber harvest altered stand structure and composition and removed a portion of the large green trees and snags within affected areas. Removal of large snags with exfoliating bark reduced potential roosting habitat for bats. Reductions in large diameter green trees also reduced potential future roost snags. Wildfire both consumed and created potential roost snags for bats. The longevity of these habitats is relatively short due to the fact that all of the trees in high severity portions of the fire were killed. These trees would be available for a relatively short time while their bark is exfoliating. Low and moderate severity portions of fire areas would provide roost habitat over a longer period of time due to the presence of a green overstory for snag recruitment. Salvage harvest of dead and dying timber would impact potential roost trees. The size of the area that would be affected, the availability of potential roosts elsewhere (burned and unburned), and the fact that riparian habitats would not be affected by proposed salvage indicate that potential impact would be minor. Personal use firewood cutting reduced densities of large snags in the analysis area, especially close to open roads. Sound snags (often with bark attached or beginning to slip) are generally more sought after than older snags that do not provide good roosting habitat. These activities have resulted in the current habitat condition for bats in the analysis area.

Ongoing and future activities, actions, and events with a potential to affect bats roosting habitat includes personal use firewood cutting and fuels treatment activities. Firewood cutting would have the same effects as those described in the past activities section. Fuels treatment activities would affect roosting habitat for these species; potential roosts may be felled and removed to reduce fire risk.

When the residual and expected effects of past, present, and reasonably foreseeable future activities are combined with the expected effects of these alternatives, there would be no cumulative reduction in roosting habitat for these species. Although a small number of snags (potential roosting structures) may be affected by new trail construction, the level of impact would have no impact on availability of habitat for these species.

## **Neotropical Migratory Birds**

### **Affected Environment**

Neotropical migratory birds are those that breed in the U.S. and winter south of the border in Central and South America. Continental and local declines in population trends for migratory and resident landbirds have developed into an international concern. Partners in Flight (PIF) led an effort to complete a series of Bird Conservation Plans for the entire continental United States to address declining population trends in migratory landbirds. The Partners in Flight Bird Conservation Plans are used to address the requirements contained in Executive Order (EO) 13186 (January 10, 2001), Responsibilities of Federal Agencies to Protect Migratory Birds. Neotropical migrants account for a significant portion of the avian biological diversity in the Wall Creek watershed (USDA 1995b) and elsewhere in the analysis area.

The Conservation Strategy for Landbirds in the Northern Rocky Mountains of Eastern Oregon and Washington (Altman 2000) identifies the following priority habitat types: Dry Forest, Late Successional Mesic Mixed Conifer, Riparian Woodland and Shrub, and several "unique" habitats.

The following habitat types are represented in the West End OHV analysis area: Dry Forest, Mesic Mixed Conifer Forest, Riparian Shrub, Steppe-shrubland, and Aspen.

### **Environmental Effects**

#### **Alternative 1 – No Action**

##### ***Direct and Indirect Effects***

Under this alternative, cross country travel would be allowed in general forest habitat and would be likely to continue in the winter range. There is a continued risk of disturbance to nests and nesting birds through this activity. Use of OHVs off of roads has the potential to directly impact nests of ground and near-ground nesting migratory birds. This activity would have the greatest impact on shrub-steppe associated bird species due to their preference for nesting on the ground. Nests may be abandoned or crushed by this activity. Use of OHVs off-road would not alter stand structure or composition or the suitability of dry forest, mesic mixed conifer forest, riparian shrub, shrub-steppe, or aspen habitats.

#### **Alternatives 2, 3, 4, and 5**

##### ***Direct and Indirect Effects***

Under all of the action alternatives, cross country OHV travel would be eliminated. The risk of impacting nests and nesting birds during cross country travel would also be eliminated under these alternatives.

Barton and Holmes (2006) found no difference between abandonment and predation rates of shrub and ground nests in close proximity (<100 meters) and far from (>100 meters) OHV trails. It was found that desertion of nests was higher in close proximity to OHV trails, although desertion did not occur greater than 21 meters from OHV trails (Barton and Holmes 2006). By reducing the number of miles available for motorized OHV use, potential impacts to Neotropical migrants, including general short term disturbance and nest desertion in close proximity (<21 meters) to trails would also be reduced.

Construction of new trails (Alternatives 2, 4, and 5 only) has the potential to impact a small number of acres of potential habitat; in addition, disturbance associated with intermittent use would have the potential to impact individual nests in close proximity to OHV trails. The table below identifies the acres of impact and disturbance associated with new trails under each alternative.

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Acres of impact on potential habitat	60,000	3.1	0	4.1	2.5
Acres of disturbance < 21 meters from trails	60,000	90	0	120	75

The proposed action alternatives would reduce or minimize potential impacts (direct impacts to nests and individuals, cumulative impacts, and disturbance) to migratory birds. These alternatives would therefore be consistent with direction provided by Executive Order 13186.

### **Cumulative Effects**

Past activities, actions, and events in the analysis area that affected Neotropical migratory bird habitat and associated Neotropical migratory birds include timber harvest, wildfire, and livestock grazing. Timber harvest altered the structure and composition of forested stands in the analysis area. Generally, these activities reduced late and old structure habitat, increasing the proportion of stand initiation, stem exclusion, and young forest stands. Harvest stimulated growth of understory shrubs, grasses, and small diameter conifers in affected stands, improving habitat for some Neotropical migratory birds requiring these habitats. Openings created by these activities are still present on the landscape today. Wildfire and prescribed fire (primarily in dry upland forest) both removed nesting and hiding cover in the short term. In the longer term, these activities and events improve dry forest habitat quality by reducing shade and fire-intolerant vegetation and stimulating shrub and grass production. The Monument and Wheeler Point Fires created high snag density patches in dry forest habitat; birds requiring this feature benefited in the short and mid term. Small patches of moist forest habitat were also burned by the fire; impacts to Neotropical birds in these stands were variable. Habitat for species requiring high snag densities was bolstered, while habitat for those requiring dense shrubs and multiple canopy layers was reduced. Impacts to shrub-steppe and riparian shrub habitats were generally minor. Historic livestock grazing had negative impacts on shrub and grassland communities, altering the structure and species composition in

these habitats. This activity also removed nesting cover and structure. More recent livestock grazing impacts dry forest habitat by decreasing ground cover and reducing shrub recruitment. Riparian vegetation continues to recover from past grazing activities. These activities have resulted in the current condition of migratory bird habitat in the analysis area.

Ongoing and reasonably foreseeable future activities, actions, and events that affect Neotropical migratory bird habitat includes riparian planting and caging, fuels treatments and burning, and fire salvage. Riparian planting would continue to reverse impacts resulting from past grazing activities. The continuity of shrubs along streams would improve in the mid and long term through this activity. Fire salvage in the Monument Fire area would impact approximately 200 acres that burned at high and moderate severity. The majority of these acres lie outside the analysis area. Fuels treatment and prescribed burning have the potential to directly and indirectly impact neotropical migratory birds. The limited size of the affected area and the propensity of these birds to re-nest if a nest is lost indicates that impacts would be negligible.

The proposed activities under all of the action alternatives would reduce existing levels of disturbance and potential mortality and nest loss associated with cross country travel. Although trail construction under Alternatives 2, 4, and 5 may impact individual birds or nests, these impacts would be negligible at the scale of individual habitat types and the entire analysis area due to the size of the affected area.

## Soils

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This section incorporates by reference the Soils Specialist Report contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of the affected environment and predicted effects of the alternatives are discussed here.

### Detrimental Soil Disturbance

#### Affected Environment

Use of existing roads for most of the trail system reduces the concern for trail construction taking soils from vegetative productive capacity, and much of the concern for increased erosion. Constructed roadbeds are generally stable and often have surface rock that reduces sediment production due to OHV use.

Observations of current OHV trails on the Morrow/Grant County OHV Park area provide a comparison of potential effects from off-road trail use. Heavy use of off-road trails by (primarily) 4-wheelers in this adjacent area indicates (that) some trail sections may need higher levels of maintenance to control erosion and excessive rutting. Trail conditions generally are holding up well to heavy use. Some areas of higher clay subsoils become slick when wet and subject to rutting when saturated. Areas of deeper volcanic ash deposits can become very dusty in dry conditions, at times causing gradual loss of these soils in the trail track(s).

## Environmental Effects

### Alternative 1- No Action

Existing travel use would be expected to remain much the same, with likelihood that cross-country use will increase, as anticipated overall use increases. Off-road and cross-country uses tend to damage soils and create erosion problems in areas that cannot readily be monitored or controlled.

**Table S-1. Summary Comparison of Soil Effects by Alternative**

	Alternatives				
	1	2	3	4	5
Miles of new trail	0	6	0	8	5
Acres of new detrimental disturbance	0	2.9	0	3.9	2.4
Sections where added mitigation needed	0	0	0	0	0

### Alternatives 2, 3, 4, and 5

#### *Direct and Indirect Effects*

Use of existing roads for the majority of the trail system limits additional soil disturbance to the area of new trail construction. Alternative 3 would limit OHV use to existing road locations with no new trail designation or construction.

The construction (and continued use) of new trail will remove the area involved from vegetative productivity on a long-term basis. Table S3 includes estimates of the acreage that would be dedicated to new trail use by alternative. Existing roads to be used for this project are already presumed to be removed from the productive base.

Dust from trail use can be an undesirable aspect in certain soil types. Volcanic ash soils, such as found in this area, commonly become dusty with repeated use in the dry times of year.

#### *Cumulative Effects*

The proposed trail system predominantly uses existing road templates in either closed or open use status. New construction would add incrementally to the dedicated travel system with the area in acres involved by alternative shown in Table S-1. The trail systems on the Forest are considered administratively reserved for recreation use and thus are not directly compared to (other) vegetative production areas for Plan compliance purposes. The anticipated reduction or deflection of cross-country use by the creation of this trail system is not quantifiable but is considered a preventative or an improvement for soil disturbance concerns.

Total road and trail area is shown in Table S-2 by Alternative. Total miles available for OHV travel were turned into acres (using a 15 feet average width, or 1.82 ac/mile).

Table S-2 Cumulative Area in Trail System by Alternative

ACTIVITY MEASURE	Alternatives				
	1	2	3	4	5
Miles Trail and Road Available	207	290	207	293	233
Acres Trail and Road Available	377	528	377	533	424
Acres New Trail	0	2.9	0	3.9	2.4
Total Acres in Trail System	377	531	377	537	426
Percent Area Increase	-	0.5	0	0.7	0.6
Cross Country Travel Allowed	Yes	No	No	No	No

## Hydrology

This section incorporates by reference the Hydrology Specialist Report contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of the affected environment and predicted effects of the alternatives are discussed here.

## Water Quality-Sedimentation

### Affected Environment

Currently, OHVs are allowed to drive cross country and on designated open roads in the project area. Most use is on open and closed roads, and off-road travel for extended distances appears to be relatively uncommon.

Natural rates of erosion and sedimentation are highly variable over time and space in part because of variations in weather, topography, and soils. This variation was quantified locally at the South Barometer Watershed Study Area. Suspended sediment was sampled on a daily basis for 11 years in the 3 square mile Study Area, which is located 5 miles east of the OHV project area and in the Wall Creek Watershed. The annual sediment yield varied by 2 orders of magnitude over the 11 years. The average sediment yield was approximately 5.3 tons per square mile per year (Harris, et al, 2004).

Annual background erosion, including roads and wildfires, was estimated by the *Watershed Erosion Prediction Project: Fuel Management Erosion* (WEPP:FuME) model to be approximately 5.7 tons per square mile per year. Annual road erosion from all existing roads was estimated by WEPP to be approximately 1.3 tons per square mile per year, which would be included in the 5.7 tons per square mile per year figure. These rates may be used to compare to erosion from OHVs,

but are not meant to be absolute predictions of future effects. These estimates do not include erosion from stream channels or mass wasting.

Road crossings of streams are often the places where eroded soil enters the water. Eroded soil is mobilized by rain and snow melt. "Most road problems during floods result from improper or inadequate engineering and design, particularly at road-stream crossings..."(Gucinski, et al, 2001). There are a total of 465 stream crossings on both open and closed roads in this project area.

## Environmental Effects

### Alternative 1 – No Action

#### *Direct and Indirect Effects*

When OHVs and full sized vehicles share open roads, the effects of the OHVs are not distinguishable from the effects of the full sized vehicles. Also, because full sized vehicles are heavier, their effects to a road surface tend to overwhelm the effects of OHVs. Therefore, in this analysis, the total miles of closed roads within the project area will be used for effects comparisons of Alternative 1 to account for all travel off of designated roads. The total miles of designated trails will be used for effects comparisons in Alternatives 2 thru 5.

The estimated rate of soil erosion attributable exclusively to OHVs on roads in this Alternative is approximately 0.62 tons per square mile of the project area per year (Table H-1). This is a portion of the background road erosion of approximately 1.3 tons per square mile of project area per year. The total amount of soil eroded from roads by OHVs is estimated to be 88 tons per year in Alternative 1.

**Table H-1. Estimated soil erosion (detachment) attributable to OHVs.**

	Alternatives				
	1 (closed roads)	2 (designated trails)	3 (designated trails)	4 (designated trails)	5 (designated trails)
Miles of designated trails or closed roads	222 <sup>4</sup>	83	0	86	26
tons/mi <sup>2</sup> of project area/yr	0.62	0.38	0.0	0.40	0.12
total tons/year	88	29	0	30	9

Most soil eroded or detached from roads is likely to be stored in the uplands rather than reaching streams. This is because most roads are outside of RHCAs, and thus are buffered from streams. Belt (1992) found that stream buffers were generally effective in controlling sediment.

<sup>4</sup> Total miles of closed roads in the project area used for comparison purposes between cross country travel and designated routes only.

OHV routes which are located in RHCAs are more likely to contribute sediment to streams, because there is not a complete buffer distance between the road and the stream. Soil eroded from OHV use on roads in RHCAs in the Project Area and delivered to streams was estimated with Watershed Erosion Prediction Project Model. The results are shown in Table H-2. The estimate is that 2.1 tons per year of sediment would enter streams under Alternative 1.

**Table H-2. Estimated soil from OHV routes in RHCAs that is likely to move within the riparian buffer.**

Alternatives					
	1 (closed roads)	2 (designated trails)	3 (designated trails)	4 (designated trails)	5 (designated trails)
Miles within RHCAs	52	14.1	0	14.3	4.1
tons/mi <sup>2</sup> of project area/yr	0.015	0.007	0.0	0.007	0.002
total tons/year	2.1	0.9	0	0.9	0.3

Road-stream crossings are the locations where the road system is in contact with the stream system. Crossings are often the places where eroded soil enters the water. There are 465 total stream crossings on open and closed roads within the project area which are available to OHVs under Alternative 1. See Table H-3. All alternatives would include 339 road-stream crossings on open roads.

**Table H-3. Road-stream crossings available to OHVs by Alternative.**

Alternatives					
	1 (closed roads)	2 (designated trails)	3 (designated trails)	4 (designated trails)	5 (designated trails)
Number of road stream crossings	126 <sup>5</sup>	35	0	35	12

Specific data or route locations are not available on off-road use by OHVs in the project area. However, there appears to be considerably less off-road use than on-road. Possible effects from cross country OHV use include bank destabilization, sediment production, and damage to riparian vegetation. The effects of off-road use can be severe and long-lasting in a specific location though they do not appear to be widespread in the project area. Off road use of OHVs may have localized detrimental effects to water quality in streams, but is not likely to be measurable at the watershed scale.

<sup>5</sup> All closed roads in the project area were used for comparison between cross country travel in alternative 1 and the use of designated trails only in the action alternatives.

## Alternative 2, 3, 4, and 5

### **Direct and Indirect Effects**

It is expected that approximately the same amount of OHV use as the existing condition would occur on fewer miles of closed roads in the action alternatives. This would concentrate the effects in a smaller area. The miles of designated trails that would be used by OHVs in the action alternatives would range from none to 86. See Tables H-1, H-2, and H-3. It is expected that OHV related soil erosion and stream sedimentation would decrease in approximate proportion to the decrease in miles of routes available for OHV use.

Alternatives 2, 4, and 5 would construct new OHV routes. The miles of new routes are included in the figures shown in Tables H-1, H-2, and H-3. None of the new routes would be constructed in RHCAs. There would be no new stream crossings. The new routes were designed to enhance the OHV riding experience, by creating looping routes and providing better access between the Umatilla National Forest and the Morrow/Grant County OHV Park.

### **Cumulative Effects**

Road and (OHV route) effects including accelerated runoff, erosion, and mobilization and delivery of sediment to streams have been summarized in numerous publications and reports (Gucinski, 2001). Road (and trail) use activities include maintenance (blading, ditch cleaning) and increased traffic levels. Road (and trail) construction generally produces the highest levels of accelerated erosion especially during the initial construction phase and in the first few years following construction (Megahan, 1987). Design and construction practices are critical to controlling erosion and accelerated runoff (Burroughs and King, 1989). Activities such as heavy maintenance (rolling dips, water bars) and decommissioning/obliteration generally disperse runoff, and decrease the erosion and sediment delivery potential of roads (Luce, 1997). Timing, duration, and location of road effects depend on preexisting conditions (roads, landscape stability, and connectivity to streams), activity intensity and distribution, and weather conditions, among other factors. Native surface roads tend to erode more than gravel or paved roads.

At the watershed (HUC 5) scale, little information on OHV use is available, except at the Morrow/Grant County OHV Park. Off-road use has been observed on private lands, for recreation and range management purposes. Off-trail use of OHVs is not allowed at the OHV Park. State law prohibits OHV use on 2-way public roads. The magnitude of the effects of off-road OHV use on private land is expected to be lower than the magnitude on National Forest System lands, because fewer people have access to private land. The extent and duration of effects is thought to be similar.

Sediment generating activities at the HUC 5 scale include roads, livestock grazing, and timber harvest on public and private land. These activities are introducing more sediment into streams than there would be without them. Three streams in the project area are listed by the State as water quality limited because of sediment. The up-coming TMDL (scheduled for 2009) will include a Water Quality Restoration Plan to address human caused sedimentation. Forest Plan grazing and harvest practices are allowing recovery of sediment sources on lands managed by the Forest Service. The Forest Service road system is gradually deteriorating, and funding for basic road maintenance is scarce. Some improvement in sedimentation has been provided by recent road obliteration projects in the Wall Creek Watershed.

Public roads off the National Forest with higher use generally receive annual maintenance. Lower use roads are deteriorating and returning to nature in some cases. Wheeler County is re-surfacing the Notch Road, which had received little attention in recent years. Private roads on inhabited private land tend to receive maintenance as needed, while abandoned roads tend to return to nature. Roads tend to have more erosion than undisturbed forest soil. Annual road maintenance tends to reduce erosion and sedimentation of streams. Roads which return to nature eventually stop eroding from their surfaces, but when located along streams tend to cause erosion from unstable banks. Re-surfacing deteriorated roads restores the structures which transport water off of roads, which reduces erosion.

The effects of road use and maintenance and trail construction, use, and maintenance would be mitigated with Best Management Practices and Design Criteria. The effects are expected to be localized, with low magnitude and short duration, and are not expected to affect any beneficial uses.

In July, 2007, the Monument Complex Fires burned approximately 55,000 acres in the Wall Creek and Lower North Fork John Day River Watersheds, including approximately 1,000 acres in the Project Area. Approximately 35 miles of mechanical fire trails were constructed to link 25 miles of existing roads to contain the fire. The fire trails were rehabilitated on National Forest System land, but not on state protected private land. It is expected that there would have been an unknown amount of erosion and sedimentation from the un-rehabilitated fire trails on private lands during the runoff of 2008. The erosion potential would have greatly decreased during the growing season of 2008, and be approaching normal by 2009 (Neary and others, 2005).

Foreseeable future activities on public and private land include grazing, timber harvest, non-commercial thinning, prescribed burning, and road use. As stated, the Forest Plan practices involving grazing and timber harvest are allowing recovery of water quality. Timber harvest on National Forest System lands will include needed road maintenance, which is expected to improve water quality. The Oregon Forest Practices Act, which regulates harvest on private land, contains provisions for maintaining water quality. The Oregon Department of Agriculture regulates grazing on private land. It is expected that there will be some reduction in erosion and sedimentation on National Forest System lands, and that the situation is static on State regulated lands.

On-going hazard tree removal, road maintenance, recreation, personal firewood cutting, and harvest of minor forest products are not expected to affect stream sedimentation in the analysis area. Fire suppression tends to prevent sedimentation.

The expected impacts of this project combined with other projects are expected to reduce overall soil erosion and the amount of sediment reaching streams in the project area.

## **Aquatics and Fish Habitat**

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This section incorporates by reference the Aquatics Report contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of the affected environment and predicted effects of the alternatives are discussed here.

The analysis area includes streams within the project area boundary. There is approximately 16,000 acres of Riparian Habitat Conservation Areas, of which over 2,200 acres are riparian areas

along fish bearing streams. There are nearly 37 miles of designated critical habitat within the planning area.

**Aquatic Habitat**

Habitat quality and the ability of the watershed and riparian areas to act as a buffer for stream systems are components of aquatic habitat considered in the analysis. The use of OHVs in Riparian Habitat Conservation Areas has the potential to affect sediment delivery, stream banks, and riparian vegetation so the focus of the effects analysis is related to those habitat components. Effects of the alternatives on these components were measured as follows:

- sediment or fines in the system (as measured by embeddedness and percent fines)
- Impacts to riparian vegetation (as measured by reductions in stream side shade)
- Affects to stream banks (potential for change in stream bank stability)
- Response of fish populations to the proposed activities.

**Affected Environment**

The project area includes approximately 16,000 acres of Riparian Habitat Conservation Areas, of which over 2,200 acres are riparian areas along fish bearing streams. In addition, there are nearly 37 miles of designated critical habitat within the planning area that currently may be impacted by OHVs.

**Environmental Effects**

Table F-1. Alternative Comparison of Effects for Aquatic and Fish Habitat.

Indicator	Alternative				
	1	2	3	4	5
Riparian vegetation	Reduce	Increase	Increase	Increase	Increase
Stream banks	Destabilize	Stabilize	Stabilize	Stabilize	Stabilize
Designated Trail (closed roads) in RHCAs of fish bearing streams (miles) <sup>6</sup> .	10.8	1.9	0	1.9	1.2

**Alternative 1 – No Action**

**Direct and Indirect Effects**

Impacts from OHVs when traveling in riparian areas off of existing roads include stream bank destabilization. Loss of riparian vegetation leads to a destabilization of stream banks. OHV crossings on streams also break down stream banks leading to an increase in width to depth ratios

<sup>6</sup> These miles include all closed roads available for OHV use.

and concentrated crossing areas. It is expected under this alternative that stream banks will continue to be destabilized at isolated OHV crossing areas.

Impacts from OHVs when traveling in riparian areas off of existing roads include riparian vegetation damage. Loss of riparian vegetation leads to a decrease in stream shade and may lead to an increase in stream temperatures if loss of vegetation is extensive. Under this alternative it is likely that riparian vegetation will continue to be reduced from OHV use in and across streams. This loss of vegetation may eventually lead to an increase in stream temperatures.

Associated with both loss of vegetation and breaking down of stream banks is isolated inputs of sediment into streams that can increase substrate embeddedness and impact spawning success of salmonids. It is expected under this alternative that OHV use near and across streams would continue to lead to an increase in sediment input and substrate embeddedness in these streams at isolated locations.

## **Alternatives 2, 3, 4, and 5**

### ***Direct and Indirect Effects***

Each of the action alternatives proposes varying miles of closed roads to be designated as OHV trails and varying miles of designated new connecting trails to be constructed. The miles of closed roads to be used as trails will vary from 0 to 1.9 miles of designated trails within RHCAs of fish bearing creeks (see Table F1). These are all existing roads with existing crossing structures and will not lead to additional sediment entering creeks over the existing condition. In all action alternatives there will not be any cross country travel allowed. This will eliminate the use of riparian areas off of existing road beds allowing areas along streams to recover where there was concentrated OHV use previously.

Recovery of the concentrated use areas will lead to a reduction of sediment inputs, an increase in riparian vegetation and stream shade, and a reduction in stream bank disturbance from eliminating OHVs fording streams. No new trail construction will occur in Riparian Habitat Conservation Areas so this activity is not expected to affect sediment inputs into streams, substrate embeddedness, riparian vegetation or shade, or stream bank stability. All action alternatives are expected to improve riparian conditions and eliminate future impacts to fish habitat and riparian areas from OHV use across streams off of existing roadbeds.

### ***Cumulative Effects***

The activities contributing sediment to streams, if left as is, would continue to impact aquatic habitats. In the past streams were fenced to reduce cattle access and associated sedimentation. Today only grazing on small sections of stream, cross country use by OHVs, and existing roads are still contributing sediment to streams. Each of the action alternatives in this project will lead to a cumulative decrease in the amount of sediment entering streams with the elimination of cross country travel of OHVs.

Streams within the planning area could have experienced an increase in sediment load and substrate embeddedness due to past management activities including road construction, timber harvest, prescribed fire, grazing, and failure of instream fish structures. Road construction increased the drainage area with 465 stream crossings that allow sediment to be transported directly to the streams from roads. Grazing in the past caused bank destabilization, which

contributed sediment to streams. Many in-stream structures were constructed in the 1980s and 1990s in planning area creeks. Several of these structures have been identified as needing work and some are causing bank erosion contributing sediment to the streams. Past activities that have reduced sediment input into streams include aspen stand restoration, which tends to increase bank stability within these stands. Fencing of RHCAs in cattle allotments has allowed riparian vegetation to recover providing more structure for increased bank stability and less trampling of the bank. In addition, the construction of upland water sources for cattle has diverted cattle from streams reducing the impact to stream banks on unfenced stretches of stream. Impacts from OHVs when traveling in riparian areas off of existing roads and trails include sediment inputs into streams. OHV crossings on streams break down stream banks leading to sediment entering streams. Isolated inputs of sediment into streams can increase substrate embeddedness.

Present activities that are contributing to an increase in sediment transport to streams include grazing and existing roads. There are still some unfenced areas of stream in cattle allotments that are impacted by grazing. Continued grazing is still causing bank destabilization at some of these locations. Several roads in riparian areas are chronic sediment sources for area streams. Other activities that are impacting sediment input into streams include aspen stand restoration. The restoration and fencing of aspen stands are helping to increase bank stability reducing the amount of sediment entering streams.

Future foreseeable activities are proposed for this planning area that would affect sediment load including grazing, riparian planting and caging, and aspen stand restoration. Grazing would continue in the analysis area and though minimized would continue to input sediment at isolated locations. Riparian planting and caging will help to stabilize stream banks and restore floodplain function so more sediment can be filtered out of streams during high flows. The restoration and fencing of aspen stands in the future will also help to increase bank stability reducing the amount of sediment entering streams.

### **Threatened, Endangered, Proposed, Candidate, and Sensitive Species (Management Indicator Species)**

One threatened fish species and one sensitive fish species exist within the project area. Critical habitat and essential fish habitat have also been designated in the project area.

### **Affected Environment**

Mid-Columbia Steelhead was listed as Threatened by the National Marine Fisheries Service under authority of the Endangered Species Act (ESA) in 1999. Interior redband trout had previously been listed as sensitive by the Forest Service in Region 6 and are on the state sensitive/critical list in Oregon. Steelhead and redband trout are also management indicator species under the Umatilla Land and Resource Management Plan. For practical purposes, juvenile resident redband trout cannot be distinguished from the anadromous form (steelhead) where the two occur together and so no distinction will be made here. This means that the more restrictive ESA "Threatened" classification would apply. Steelhead are known to be present throughout Big Wall, South Fork Big Wall, Indian, East Fork Indian, Wilson, Little Wilson, Colvin, Willow Springs, Henry Wheeler, and Alder creeks and Stahl and East Bologna canyons. Approximately 36 miles of steelhead designated critical habitat are included in the analysis area for this project including all of the streams listed above. All perennial streams below long-standing natural fish passage barriers in the John Day River system have been designated as essential fish habitat for spring Chinook

salmon. This would include all perennial fish bearing streams within the project area. Chinook salmon are located downstream of the project area in the North Fork John Day River.

## Environmental Effects

Table F-2. Federally ESA listed and Regional 6 Sensitive Aquatic Species with a potential to occur in the project area.

Species	Listing	Effects of No Action	Effects of Alternatives 2, 3, 4, and 5
Mid-Columbia Steelhead <i>Oncorhynchus mykiss gairdneri</i>	Threatened	NLAA <sup>7</sup>	NLAA (Beneficial)
Designated Critical Habitat for Steelhead	Threatened	NLAA	NLAA (Beneficial)
Essential Fish Habitat for Chinook Salmon	Threatened	NLAA	NLAA (Beneficial)
Interior Redband Trout <i>Oncorhynchus mykiss gairdneri</i>	Sensitive	MI <sup>8</sup>	MI (Beneficial)

## Alternative 1 – No Action

### Direct and Indirect Effects

This alternative would directly affect fish species (reband trout and steelhead) in the analysis area. OHVs may continue to ford streams and drive through Riparian Habitat Conservation Areas off of existing roadbeds or trails. Impacts from OHVs when traveling in riparian areas off of existing roads and trails include riparian vegetation damage, stream bank destabilization, and sediment inputs into streams. Loss of riparian vegetation leads to a decrease in stream shade and can lead to destabilization of stream banks. OHV crossings on streams also break down stream banks leading to an increase in width to depth ratios and concentrated crossing areas. Associated with both loss of vegetation and breaking down of stream banks is isolated inputs of sediment into streams that can increase substrate embeddedness and impact spawning success of salmonids.

Determination: Continuing with cross country travel by OHVs may affect but is not likely to adversely affect Mid-Columbia steelhead, its designated critical habitat or essential fish habitat for Chinook salmon. This alternative also may impact individuals or habitat for reband trout, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

<sup>7</sup> May affect but not likely to adversely affect

<sup>8</sup> May impact individuals or habitat but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

## Alternatives 2, 3, 4, and 5

### **Direct and Indirect Effects**

Because the miles of closed roads to be designated as a trail in all cases will be less than the existing condition and there will not be any cross country travel allowed there will be no additional impact to aquatic habitat and the fish populations these habitats support under any action alternative. This will eliminate the use of riparian areas off of existing road beds allowing areas along streams to recover where there was concentrated OHV use previously. In addition no new trails will be constructed within riparian habitat conservation areas so these will not affect fish populations. All closed roads to be used within RHCAs of fish bearing creeks have existing crossing structures and no additional effects to fish populations will occur with the use of these roads. All action alternatives are expected to improve riparian conditions and eliminate future impacts from OHV use along streams off of existing roadbeds. Recovery of the concentrated use areas by OHVs will lead to a reduction of sediment inputs and increase in riparian vegetation. This will in turn improve fish habitat at these locations.

Determination: This alternative may affect but is not likely to adversely affect Mid-Columbia steelhead, its designated critical habitat or essential fish habitat for Chinook salmon. This alternative also may impact individuals or habitat for redband trout, but would not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

### **Cumulative Effects**

Threatened and Endangered species in the analysis area include Mid-Columbia steelhead and management indicator species include redband trout and steelhead. Most activities discussed under cumulative effects for aquatic habitat have affected fish populations in these streams. Increases in temperature can lead to increased stress to fish and reduction in spawning and rearing success. An increase in sediment yields could potentially add to degradation of aquatic habitat and fish populations by:

- increasing suspended sediment, which can have detrimental effects on fish health;
- filling interstitial spaces, which reduces escape and hiding cover for fish;
- increasing width/depth ratios, which can increase solar heating of water and also decrease fish hiding and escape cover and fish mobility;
- decreasing the quality of spawning substrate, which reduces reproductive success;
- reducing pool volumes, which decreases the amount of hiding, escape and resting habitat available and makes fish more vulnerable to predators.

Increases in sediment can increase stress on fish reducing spawning success, although whether the changes would be biologically significant would depend on many factors, including the amount and particle size of sediment produced, the size of the stream, amount of available refuge, including side channels and tributaries, and the conditions in the stream before the introduction of additional sediment. Fish in streams in good condition could tolerate more such changes than fish already stressed by poor habitat conditions. The contribution to cumulative effects of all action alternatives would be a reduction of stress to redband trout and steelhead due to the elimination of cross country travel by OHVs and the eliminations of the impacts from these OHVs in riparian areas and where they ford streams or travel within Riparian Habitat Conservation Areas.

## Botanical

This section incorporates by reference the Botanical Biological Evaluation contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of and the affected environment and predicted effects of the alternatives are discussed here.

### Threatened, Endangered, Proposed, Candidate, and Sensitive Species

Two sensitive plant species from the Regional Forester's Sensitive Species List occur in the OHV project area. One threatened plant species is known to occur on the Umatilla National Forest.

Table B-01. Federally ESA listed and Regional 6 Sensitive Botanical Species with a potential to occur in the project area.

Species	Listing	Effects of No Action	Effects of Alternatives 2, 3, 4, and 5
Arrow-leaved thelypody <i>Thelypodium eucosmum</i> (THEU)	Sensitive	May impact individuals or habitat	No Impact
Bolander's spikerush <i>Eleocharis bolanderi</i> (ELBO)	Sensitive	May impact individuals or habitat	No Impact
<i>Silene spaldingii</i> (SISP)	Threatened	No Effect	No Effect

### Bolander's spikerush - Sensitive

#### Affected Environment

Three surveys in 2006 and 2007 revealed three occurrences of the species within the project area.

#### Environmental Effects

##### Alternative 1 – No Action

All three occurrences of Bolander's spikerush could be directly physically damaged by OHV traffic. The risk of damage to these populations of spikerush would be especially high during the seasonally moist time of year when the ground is soft and the tires of OHVs would dig deeper into the root zone.

Determination: The no action alternative may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

##### Alternative 2, 3, 4, and 5

##### Direct and Indirect Effects

Risk of direct physical damage from OHV traffic to these plant populations is removed under Alternatives 2, 3, 4 and 5. Overland use of OHVs would no longer be allowed and the closed roads

proximal to two occurrences of Bolander's spikerush (2140-061 and 2200-072) would be closed to OHV use under Alternatives 2, 3, 4 and 5.

Determination: There will be 'no impact' to Bolander's spikerush from the proposed project activities. In fact, there will be reduced risk of direct physical disturbance to the plant populations with the proposed restrictions of OHV traffic.

### ***Cumulative Effects***

See Arrowleaf thelypody cumulative effects section below.

## **Arrowleaf thelypody**

### **Affected Environment**

Plant surveys occurred within the project area from 1988 thru 2002. These surveys documented one occurrence of arrowleaf thelypody within the OHV project area. This plant population is located in Bologna Canyon near the southern edge of the project area with no proximal roads/trails.

### **Environmental Effects**

#### **Alternative 1 – No Action**

##### ***Direct and Indirect Effects***

The one known population of arrowleaf thelypody would continue to be at risk of direct physical disturbance from OHVs if overland travel were to occur in the vicinity of the plants. Direct physical disturbance to this biennial plant before or during flowering, would likely prevent seed set, thus reducing the reproductive potential of the plant population.

Determination: The no action alternative may impact individuals or habitat, but will not likely contribute to a trend towards federal listing or cause a loss of viability to the population or species.

#### **Alternative 2, 3, 4, and 5**

##### ***Direct and Indirect Effects***

The risk of direct physical disturbance to arrowleaf thelypody from OHV traffic would be removed. There are no OHV routes or roads nor any proposed new trails in the vicinity of the one known population of arrowleaf thelypody in the project area.

Determination: There would be 'no impact' to arrowleaf thelypody from the proposed OHV project under Alternatives 2, 3, 4 and 5.

### ***Cumulative Effects***

All ground disturbing activities (mining, grazing, logging, road building, activities associated with fire suppression, construction of campgrounds) in the past, starting with Euro-American settlement in the 1880s, have possibly contributed to a reduction/degradation in potential habitat for arrowleaf thelypody and Bolander's spikerush. This is speculative and difficult to evaluate since inventory and mapping of PETS plant species did not really begin until the 1900s.

Implementation of the proposed OHV project prohibiting overland use of OHVs and not opening closed roads to OHV use proximal to Bolander's spikerush would likely be beneficial to the arrowleaf thelypody and the spikerush populations located in the project area.

The ground disturbing activities listed in the paragraph above have undoubtedly contributed to and will continue to contribute to the introduction and spread of invasive plant species. The present patterns of recreational use with dispersed campsites and OHV use contribute to the continued spread of invasive plant infestations.

The spread of invasive plant species is second only to habitat destruction for endangering imperiled species (Flather et. al. 1994). Implementation of the proposed OHV project with its associated prohibition of overland use of OHVs would reduce the risk of introducing invasive plant infestations in off road areas.

### **Silene spaldingii - Threatened**

*Silene spaldingii* is federally listed as threatened and known to occur on the Umatilla and Wallowa-Whitman National Forests. This project will have No Effect on *Silene spaldingii*. *Silene spaldingii* occurs primarily in open grasslands with deep Palousian soils which do not occur within the project area.

### **Non-vascular plant species (bryophytes and lichens)**

There is no known habitat within the project area units for any non-vascular plant species that is currently on the Region 6 Regional Forester's Sensitive species list. Therefore the determination is 'no impact' (NI) to listed non-vascular plant species.

### **Noxious Weeds**

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This section incorporates by reference the Noxious Weeds Report contained in the Project Record located at the Heppner Ranger District. Methodologies, assumptions and limitations of analysis and other details are contained in the report. A summary of and the affected environment and predicted effects of the alternatives are discussed here.

### **Potential Establishment and Spread**

#### **Affected Environment**

There are approximately 214 active noxious weed sites (3,061 acres) within the project area. Known noxious weed species in the area include diffuse knapweed, spotted knapweed, dalmation toadflax, yellow toadflax, hound's tongue, St. John's wort, Canada thistle, and scotch thistle. Diffuse knapweed, spotted knapweed, scotch thistle, hound's tongue, dalmation toadflax and yellow toadflax are high priority weeds of concern.

Most of the noxious weed sites are found along road corridors. From these points of initial infestation, weed species become opportunistic in invading suitable microhabitats adjacent to the initial infestation site. Most of the noxious weed species of the Umatilla National Forest thrive in open full sunlight in disturbed soils in which native species have been diminished or displaced (conditions commonly associated with roads). Most of the noxious weed species found in the analysis area are spread by vehicle traffic making road corridor weed sites of high concern.

Spotted knapweed, diffuse knapweed, can be spread by vehicles. Dalmation toadflax, yellow toadflax, scotch thistle, hound's tongue are primarily spread by other means. These weeds are extremely competitive, and are generally found along roads and right of ways. However, inventory has shown the spread of these species to be relatively slow. As an example, there are approximately 2,589 acres of inventoried diffuse knapweed within the analysis area. Densities of weed populations are between 1-100 plants per acre. Due to the low population of diffuse knapweed within the analysis area, current threat of spread is low.

Low priority weed species, such as Canada thistle and bull thistle, also readily establish where soil and plant associations have been disturbed. These species, however, are not highly persistent and populations usually decline as the tree canopy closes and/or with competition from seeded/native species.

## Environmental Effects

### Alternative 1 – No Action

#### *Direct and Indirect Effects*

The effects of the project on noxious weed introduction, establishment, and spread is indicated by the area of potential disturbance as measured in miles of designated roads and trails to be used for OHV routes within the project area. The table below indicates miles of potential disturbance by alternative and a description of effects in the sections following.

The potential of noxious weed spread by OHVs where cross country travel occurs would result in difficulty in locating newly established sites due to the undefined area of travel. Currently roads are inspected and treated annually but this would not account for cross country travel areas by OHVs. Therefore, the probability of increase in establishment and spread of noxious weeds would be the highest in Alternative 1.

**Table N-01. Disturbance and Noxious Weed Potential Spread by Alternative**

	Alternative				
	1	2	3	4	5
Designated open roads	189	189	189	189	189
Designated open roads - seasonal	18	18	18	18	18
Designated open trails -	222 <sup>9</sup>	46	0	53	13
Designated open trails - seasonal	0	31	0	25	8
Designated new trail	0	5.5	0	8	5
Designated new trail - seasonal	0	.5	0	0	0
Total Miles Available for OHV Travel	430 <sup>1</sup>	290	207	293	233
Unmanaged cross country travel - Designated riding area	Yes	No	No	No	No

<sup>9</sup> Total miles of closed roads was used to demonstrate the potential effects of cross country travel.

## Alternative 2, 3, 4, and 5

### **Direct and Indirect Effects**

The increased use of OHVs within the planning area could potentially increase the spread of noxious weeds. Confining the use of OHVs to areas along open roads, closed roads and trails would increase the likelihood that weed population could be detected early while the populations are small and limit the chance that weeds would be able spread away from roads and trails to take over adjacent lands. Not allowing cross country travel would significantly reduce the chances of weeds becoming established off designated travel routes.

Many methods would be used to reduce the potential of noxious weed establishment and spread. Education programs that inform OHV users about the important of maintaining native vegetation is important to reduce the spread of noxious weeds. All known noxious weed sites that are cleared for treatment would be monitored and treated within the project area. This would eliminate existing known weed sources, which would effectively reduce the spread of noxious weeds. Designated trails that are part of proposed use areas would be inventoried and will remain open unless weed species are inventoried on the access areas. These areas could be closed to motorized access until the weed population has been treated. Information about noxious weeds will increase awareness of noxious weeds for early detection of unknown sites in the area.

Mitigation measures in Appendix B of the Noxious Weeds Report and Chapter 2 of this EA would help avoid conditions that favor the invasion and establishment of noxious weeds. Early treatment of noxious weed sites would be limited to manual treatment methods (as defined in the 1995 Forest EA) until other direction is implemented. Corrective and maintenance strategies (as defined in the 1995 Forest EA and the R6 Guide to Vegetation Management Projects) would be generally employed in established infestations (as defined in the 1995 Forest EA). As a result, all the action alternatives would be consistent with the Forest Plan, Regional FEIS for Managing Competing and Unwanted Vegetation, the associated Mediated Agreement, the Guide for Conducting Vegetation Management Projects in the Pacific Northwest Region (R6 Guide to Vegetation Management Projects), the Land and Resource Management Plan for the Umatilla National Forest (Forest Plan), and the Umatilla National Forest Environmental Assessment for the Management of Noxious Weeds (1995 Forest EA).

### **Cumulative Effects**

Cumulative effects are the same under all alternatives with only the variance in the direct and indirect effects.

Past road construction and maintenance, grazing, timber harvest and other soil disturbance have provided:

- environments for noxious weed species establishment,
- vectors for noxious weed dispersal,
- and infestations of noxious weeds for seed sources.

The potential for noxious weed establishment and spread from vehicles not associated with the project along open road corridors (including seasonally open roads) would continue. The potential for vehicles, people, wind, or animals to transport noxious weed seed from within or from outside the analysis area would continue. This would include transportation between the OHV Park and

the National Forest or private land and the National Forest. The Morrow/Grant County OHV Park is very proactive in weed preventions and treatment. Weed preventive measures at the park include: OHV vehicle wash-down station, public information boards, annual weed inspection by the county weed inspector, and treatment of sites (personal communications, O'Brien, 2008). Because of the measures taken by the park it would be expected that transportation of weed sources from the OHV park users to the National Forest would be minimal.

The cumulative effects of all action alternatives on the establishment and spread of high priority noxious weeds would be low to moderate. Past activities within the analysis area have resulted in extremely low densities of high priority noxious weeds. Known sites would be treated before seed is produced and before additional disturbance occurs to reduce the potential spread by OHVs associated with this project and other vectors (such as livestock, recreationists, and wildlife).

The cumulative effects of all action alternatives on the establishment and spread of low priority noxious weeds is greater than that of high priority noxious weeds, due to the lack of treatment on those species. Low priority noxious weeds are those species that are considered widespread throughout the forest and generally are less competitive. Low priority noxious weeds within the analysis area (bull thistle, Canada thistle, and St. John's wort) are generally less persistent than high priority weeds and are out competed by forest canopy and competing understory vegetation, resulting in a reduction of these weed species in higher seral stage plant associations.

### **Summary**

As shown in Table 4, Alternative 2 could potentially disturb less ground vegetation than Alternative 1. All action alternatives are the same in relation to treatment method and designated roads. The probability of establishment and spread of noxious weeds under the proposed action would be higher than alternatives 3 and 5 and lower than alternatives 1 and 4. The area of potential disturbance is based on miles of designated roads and trails.

As shown in Table 4, Alternative 3 would result in the least miles of access resulting in the least amount of potential noxious weed disturbance. In addition this alternative does not permit OHVs access off of roads open to vehicle traffic. Therefore, the probability of establishment of new populations and spread of noxious weeds would be the lowest in Alternative 3.

Alternative 4 could potentially disturb 3 more miles of designated trail than Alternative 2. This alternative does provide one additional access route into the Morrow/Grant County OHV Park than Alternative 2, thus increasing the possibility of transporting weeds between land ownerships.

Alternative 5 would result in fewer miles of potential weed disturbance than alternative 1, 2, and 4 and more than Alternative 3.

### **Cost of Weed Treatment**

Weeds are treated annually along roads and within current activity areas. Based on the miles of designated roads and trails the expected cost for noxious weed treatment in the project area vary from the high of \$13,000+ under Alternative 1 to no added cost under Alternative 3. The 207 miles of open roads would receive weed treatment with or without OHV designated routes and are not included in the cost of treatment by alternative, thus resulting in no added cost to treat noxious weeds under alternative 3. This is equivalent to Alternative 3.

Table N-2. Disturbance and Noxious Weed Potential Spread by Alternative<sup>10</sup>

Alternative 1 (No Action)	Alternative 2 (Proposed)	Alternative 3	Alternative 4	Alternative 5
\$13,000+	\$6,059	\$0	\$6,278	\$1,889

## Cultural Resources

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### Affected Environment

Past archaeological surveys have identified historic and prehistoric properties throughout the project area. Locations or detailed information is not identified in this document to protect the sites.

#### Alternative 1 – No Action

##### *Direct and Indirect Effects*

The possibility for adverse effects to cultural resources is relatively high in this alternative. This is primarily due to cross-country travel being allowed. There are known sites away from the existing roads that could be impacted from off road, cross-country travel.

#### Alternative 2, 3, 4, and 5

##### *Direct and Indirect Effects*

The possibility for adverse effects to cultural resources is relatively low under these alternatives. This is primarily due to cross-country travel being prohibited and all travel being on designated routes. There are known sites away from the existing roads that would be protected because travel would be confined to designated roads and/or trails and no cross-country travel would be allowed.

## Landscape Characteristics

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This section incorporates by reference the Landscape Characteristics section of the West End OHV Project contained in the project analysis file at the Heppner Ranger District. Analysis methodologies and other details are contained in the analysis file and the affected environment and predicted effects of the Proposed Action and its alternatives are discussed in this section.

During public involvement, Oregon Wild referred to their inventory of “non-inventoried roadless areas” they created using criteria they developed and asked the forest service to consider the effects to these areas. They stated their “non-inventoried roadless areas” contain roadless area characteristics such as wildlife corridors and habitat, high water quality, refugia of native vegetation, and non-motorized recreation opportunities.

The Forest Service prepared an inventory of areas with wilderness potential following procedures and criteria found in Forest Service Handbook 1909.12, Chapter 70 (Project File). This inventory is the best available information about this resource topic for the West End OHV project (Project File).

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<sup>10</sup> Cost of weed treatment is based on current implementation. Future costs for treatment may vary but will be relative between alternatives.

Lands with characteristics consistent with the criteria meet the statutory definition of wilderness and were included in the inventory of areas with wilderness potential. Lands with characteristics not consistent with the criteria were excluded from the inventory. Typical reasons lands were excluded include: areas were too small (less than 5,000 acres); they were not contiguous with existing wilderness and/or inventoried roadless areas; they were not self-contained ecosystems and could not be effectively managed as wilderness; and lastly, improvements and developments were substantially recognizable and evident such as stumps, skid trails, roads, landings or discontinuities in canopy closure between harvested and unharvested landscapes. Local knowledge and judgment regarding unique, site-specific conditions were used to locate boundaries at prominent natural or semi-permanent human-made features to facilitate easy on-the-ground identification.

#### Scope of Analysis

All effects analysis was accomplished within the project area boundary. Of the 29,677 acres of Oregon Wild's "non-inventoried roadless areas" within the project boundary, there were no acres that met forest service criteria with wilderness potential (Project File).

The current condition of soil and water quality; plant and animal communities; habitat for threatened, endangered, and sensitive species; noxious weeds, recreation; and cultural resources are described elsewhere in Chapter 3 of this EA. Evaluation criteria used to compare impacts to landscape characteristics are natural integrity and apparent naturalness, solitude and remoteness, and special features.

### **Affected Environment**

There are no designated wilderness areas within the Heppner Ranger District or within the project boundary. Wilderness evaluation and wilderness recommendations are a forest planning issue and outside the scope of this site-specific analysis and decision.

There are no Forest Service inventoried roadless areas within or adjacent to the project boundary.

The existing condition of all lands within Oregon Wild's areas of "non-inventoried roadless areas" and affected by the West End OHV project presents a landscape that has been managed and is generally developed in nature. For the reasons described earlier these lands did not meet the inventory criteria for an area with wilderness potential. Past management and current developed conditions within the project boundary reflect the intent and decisions made in the Forest Plan (1990 as amended). The land management allocations within these areas are: A4-Viewshed 2; C3-Big Game Winter Range; C5-Riparian; and E1-Timber and Forage. All of these management areas allow OHV use. One management area, D2-Research Natural Area, does not.

Natural integrity and apparent naturalness: These areas contain evidence of fences and stock ponds, past timber harvest, motorized ATV use, and motorized use on existing forest service system roads is substantially recognizable. Livestock grazing has occurred for at least the past 100 years, fire suppression activity for approximately that same length of time, and dispersed recreation, including hunting and camping. Ongoing removal of danger trees along forest roads changes the vegetation but does not change the overall sense of naturalness along a developed transportation corridor. Over the past several decades, fire exclusion has altered natural ecological processes. Suppression of fire in these areas has helped create the stand composition and structure that is now present. In the dry upland forest, stands once dominated by open park-like

stands of ponderosa pine have closed in with shade tolerant species such as Douglas-fir and grand fir.

**Solitude and remoteness:** For reasons described above, there is little opportunity for either solitude or remoteness. These lands are not generally recognized or used by the public to find a feeling of solitude, remoteness, the spirit of adventure and awareness, serenity, or self reliance. Existing roads and trails intersecting and bordering these areas and human use on these roads and trails, combined with recognizable evidence of past and present management, hinders the opportunity for primitive recreation and precludes a feeling of solitude and remoteness.

**Special features:** A proposed Research Natural Area (pRNA) is located west of FR 24. The pRNA boundary is about half a mile from any open road (Project File). There are no existing OHV roads or trails within the pRNA. No other special features or unique qualities (geological, air quality, wildlife, T&E habitat, biological, ecological, cultural, or scientific) were identified within the project area where new trail construction is proposed (EA, Chapter 3 and Project File).

## **Direct and Indirect Effects**

### **Alternative 1 – No Action**

**Natural integrity and apparent naturalness:** There would be continued existing evidence of human activity. The current escalation in OHV use would likely result in new routes, causing a decrease in the natural appearance of the area.

**Solitude and remoteness:** There would be no direct or indirect effects on the current opportunities for solitude and remoteness in both the short or long term, therefore, the conditions described in the affected environment would remain unchanged except by natural processes and ongoing management activities.

**Special features:** No OHV use is designated in the proposed Research Natural Area, although as stated in other sections of this EA the boundary between general forest and other management areas are not identified on the ground and are difficult to recognize therefore, while traveling cross country OHV users could easily travel through the pRNA resulting in disturbance to the plant community. This disturbance could result in soil exposure and competition with other plant species threatening the integrity of the plant community.

The impacts to soil and water quality; plant and animal communities; habitat for threatened, endangered, and sensitive species; recreation; noxious weeds; and cultural resources are disclosed in other sections of this Chapter and are not reiterated here.

### **Alternative 2 and 4**

**Natural integrity and apparent naturalness:** Restricting OHV use to existing roads and trails would increase the natural integrity of the area by reducing the impacts to wildlife, noxious weed spread, soil disturbance, and impacts to riparian vegetation. The apparent naturalness would also increase as user created trails that resulted from past cross country use begin to blend into the surrounding forested landscape as grasses, shrubs and trees reestablish. Designation of new trails may reduce the apparent naturalness along newly established routes that did not have concentrated OHV use under cross country travel. Natural integrity and apparent naturalness would increase on about 91,000 acres and reduce on about 6 acres due to the designation of OHV routes on closed roads and new trail.

Solitude and remoteness: Concentrating OHV use on designated trails and roads would further reduce the feeling of solitude immediately adjacent to roads and trails. However, outside the influence of the sights and sounds (time or space) of OHVs on roads and trails, the sense of solitude would increase for non-OHV users (foot travel, horse riders) experiencing cross-country travel.

Special features: No OHV use would be designated off roads or trails, and no new trails are being proposed within the pRNA; therefore the pRNA would not be affected.

### **Alternative 3**

Natural integrity and apparent naturalness: Restricting OHV use to existing roads would have the highest degree of naturalness by reducing the impacts to wildlife, noxious weed spread, soil disturbance, and impacts to riparian vegetation. All 91,000 acres would result in increased natural integrity and apparent naturalness.

Solitude and remoteness: Since OHV use is restricted to roads and no new trails are designated, this alternative would have the highest sense of solitude over the other alternatives.

Special features: Same as Alternative 2 and 4.

### **Alternative 5**

Natural integrity and apparent naturalness: The effects would be the same as the effects common to alternatives 2 and 4 except natural integrity and apparent naturalness would decrease on about 3 acres where trails would be located.

Solitude and remoteness: Would be greater than alternative 2 and 4 but less than Alternative 3

Special features: Same as Alternative 2 and 4.

### **Cumulative Effects**

Natural integrity or apparent naturalness and solitude and remoteness will be cumulatively impacted by past timber harvest, Wheeler Point Fire, past road construction; current and past grazing, current dispersed camping, current motorized vehicle use on roads, routine road maintenance; and future management projects like Long Prairie Fuels Reduction. These lands within the project area would not meet inventory criteria for areas with wilderness potential due to cumulative impacts from other management activities in the project area. This outcome is consistent with the intent of the land allocation decisions made in the Forest Plan.

There would be no direct or indirect environmental effects to the pRNA therefore there would be no cumulative effect of this project and other management activities in the pRNA.

## **Compliance and Enforcement**

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The current situation with regard to OHV travel management relies on the issuance of Forest Special Orders under the authority granted in 36 CFR 261 (2007) to restrict motorized travel. This approach often results in an array of Forest Special Orders created over time that can be inconsistent and difficult to display in a comprehensive fashion to forest users. This can compromise motorized enthusiast compliance in that restrictions are not always apparent and can reduce enforcement effectiveness due to the public notification burden not being fully satisfied by the agency.

In order to educate OHV users and others the Forest Service uses many strategies to provide information to the public. Users are informed of regulations, including OHV use, through press releases, being involved in project development, information brochures and signs located at local district offices', throughout the forest on information kiosks, at local OHV dealerships and the Morrow/Grant County OHV Park. In addition, the Umatilla National Forest web site contains information for the public on recreation and OHV use. A communication plan for implementation would be developed following the decision. This plan will contain specific information about OHV use in the project area. The scoping section in Chapter 2 of this EA has a list of strategies the Heppner Ranger District has used to date to inform the public about this project and proposed OHV use. These strategies to educate the public will continue following the decision.

A Motor Vehicle Use Map (MVUM) will be produced following the decision of this project. This map will identify a designated system for OHV use and other motorized travel. This will replace the Forest Special Orders. All areas and roads not included on this map would be closed to OHV use. Changes to the system would be identified annually and updated maps would be made available.

Enforcement is carried out through the use of several agencies: Forest Protection Officers, Forest Service Law Enforcement Officers, Oregon State Police, and County Sheriffs' offices. In addition, forest service personal presence and personal contacts in the area would aid in enforcing compliance. Extra patrols would continue to be specifically aligned with high use times and the forest service would follow-up on reports from the public. The Heppner Ranger district currently applies for and receives state grants to fund enforcement. These grants are available every year and it is expected that this opportunity to aid in funding enforcement would continue.

### **Direct and Indirect Effects**

The analysis area for considering the effects of the alternatives on compliance and enforcement include the entire project area within the National Forest boundary.

#### ***Alternative 1***

Alternative 1 would rely on the new Motor Vehicle Use Map (MVUM) to identify the designated roads, trails and areas for OHV use.

The current Access Travel Management Plan allows OHV cross country travel in the general forest area. This equates to approximately 61,000 acres of the 91,000 acre planning area. Although cross country travel is allowed only on the general forest area, the on-the-ground delineation of this boundary is not well defined. Boundaries are often associated with an elevation band, vegetation type change, or land feature (such as riparian areas). It is difficult for users to know and understand where changes in use restrictions occur. For this reason compliance is expected to be low.

On the ground delineation would be required in order to increase compliance of cross country travel only in the general forest area. This would require posting or fencing to define the boundaries. Enforcement is expected to be difficult and require extensive enforcement presences and additional signing to be effective.

#### ***Alternative 2***

Alternative 2 would restrict OHV travel to designated routes only across the planning area and would rely on the Motor Vehicle Use Map (MVUM) to identify the designated routes for OHV use.

Motorized opportunities and restrictions would be more effectively and comprehensively communicated and identifiable on the ground to both motorized and non-motorized recreation enthusiasts alike. Identifying a designated OHV system in the project area would be consistent with the OHV use across the entire Umatilla National Forest. Compliance and enforcement effectiveness would be expected to be higher than Alternative 1 due to the increased ease of understanding OHV use designations.

### **Alternative 3**

Alternative 3 would restrict OHV travel to designated open roads across the planning area and would rely on the Motor Vehicle Use Map (MVUM) to identify the designated routes for OHV use. Compliance would be expected to be lower than Alternative 2 due to less riding opportunities and less OHV route connections. Understanding of OHV routes in the area may improve as it will be similar as the rest of the District where OHV use is limited to only roads open to highway legal vehicles. The expected effects in the area of enforcement would be the same as Alternative 2.

### **Alternative 4**

Alternative 4 would restrict OHV travel to designated routes across the planning area and would rely on the Motor Vehicle Use Map (MVUM) to identify the designated routes for OHV use. Compliance may be better than Alternative 1 due to increased understanding of OHV route designation. Overall compliance is expected to be higher than in Alternative 3 and similar to Alternative 2 and 5 due to additional loops and connections designated for OHVs. The expected effects in the area of enforcement would be the same as Alternative 2, 3, and 5.

### **Alternative 5**

Alternative 5 would restrict OHV travel to designated routes across the planning area and would rely on the Motor Vehicle Use Map (MVUM) to identify the designated routes for OHV use. Compliance may be better than Alternative 1 due to increased understanding of OHV route designation. Overall compliance is expected to be higher than in Alternative 3 and similar to Alternative 2 and 4 due to designated loops and connections for OHVs. Alternative 5 expected effects in the area of enforcement would be the same as Alternative 2, 3, and 4.

## **Cumulative Effects**

All other areas of the Umatilla National Forest, the Morrow/Grant County OHV Park and the Bureau of Land Management lands adjacent to the project area currently manage OHV use on a designated trail system. Designating a trail system in the project area provides users with consistency across these public lands. Consistent OHV regulations across land ownerships would increase compliance and enforcement effectiveness in both the project area and adjacent areas. With various agencies carrying out enforcement of these regulations ease of enforcement would also increase by having consistent OHV use regulations across land ownerships.

## **Maintenance and Administration**

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As part of the route designation process, the Travel Management Rule (36 CFR Part 212, 2007) requires consideration of the availability of resources for the maintenance and administration of the designated routes (36 CFR §212.55, 2007). To satisfy that requirement, the proposed action was developed by reviewing the closed roads in the planning area for suitability as a motorized trail.

Roads were removed from consideration after reviewing where important resource concerns existed. Resources of concern included riparian habitat, wildlife habitat, sensitive botanical areas, cultural resources, and conflicts with adjacent land uses. Maintenance costs would be greatly reduced by eliminating specific areas as designated trails for OHV use and avoiding potential resource damage.

A comparison and cost estimate of maintaining the remaining miles by alternatives is displayed below. Due to the cross country travel allowed in the existing condition trails are not designated or maintained by the district. Users perform some maintenance such as logout on designated trails as needed.

**Table M-1: Annual Maintenance Cost for Designated OHV Trails**

Alternatives					
	1	2	3	4	5
Miles	-	83	0	86	26
Cost/Mile		\$275	\$275	\$275	\$275
Total Cost	-	\$22,825	\$0	\$23,650	\$7,150

All of the action alternatives would result in no change in the total miles of NFS road. Since closed roads are seldom maintained this would essentially not affect the agency's ability to maintain and administer the total road system. The designated trails (closed roads) that were included in the proposed action or any of the action alternatives allow the maintenance to be low standard primitive trails and require no substantive improvements. The new trails proposed would not be located in any riparian areas and avoid resource issues. All of the trails considered for designation were determined to be sustainable in their current location and condition, and to require little maintenance to accommodate expected use. Expected annual maintenance would include logout and drainage maintenance.

Work is expected to be accomplished in a variety of ways and with various funding sources such as: volunteers, appropriated dollars, and grants (The Umatilla National Forest has competed successfully for grants from the Oregon Parks and Recreation District for maintenance dollars).

## **Compliance with Other Laws, Regulations, and Policies**

This section describes how the action alternatives comply with applicable State and Federal laws, regulations, and policies.

### **National Historic Preservation Act**

State Historic Preservation Office consultation has been completed under the Programmatic Agreement among the United States Department of Agriculture, Forest Service, Pacific Northwest Region (Region 6), The Advisory Council on Historic Preservation, and the Oregon State Historic Preservation Officer regarding Cultural Resource Management on National Forests in the State of Oregon, dated March 10, 1995.

Identified sites will be protected from all project activities associated with the West-End OHV Project. Should additional sites be found during project implementation the area or designated route would be closed and the Forest Archaeologist would be immediately notified.

## **Endangered Species Act and Regional Forester's Sensitive Species**

The Endangered Species Act requires protection of all species listed as threatened or endangered by federal regulating agencies (Fish and Wildlife Service and National Marine Fisheries Service). Biological Evaluations for Endangered, Threatened, and Sensitive plant, wildlife, and fish species have been completed. Determinations were made that none of the proposed alternatives would adversely affect, contribute to a trend toward Federal listing, nor cause a loss of viability to the listed plant and animal populations or species.

Details regarding the actual species found within the West End OHV project area and the potential effects of proposed activities on those species and their habitat are contained under the Terrestrial Wildlife, Aquatic Habitat and Fish, and Botanical Species: Proposed, Endangered, Threatened, and Sensitive species sections of this EA.

## **Inventoried Roadless Areas, Wilderness, and Wild and Scenic Rivers**

There are no inventoried roadless areas, wilderness areas, or wild and scenic rivers within the project area.

## **Clean Water Act**

The Clean Water Act of 1972 (CWA) and amendments require the restoration and maintenance of the chemical, physical, and biological integrity of the nation's waters. All of the activities proposed in this project were designed to comply with the Clean Water Act.

The guidance in the Forest Plan is to "meet or exceed state requirements in accordance with the Clean Water Act for protection of waters of the State of Oregon (OAR Chapter 340-341) through planning, application, and monitoring of Best Management Practices (BMPs) in conformance with the Clean Water Act, regulations, and Federal guidance" (Forest Plan, p. 4-77).

The West End OHV Project uses planning and application BMPs and design elements to maintain existing water quality. Implementation and effectiveness of BMPs and design elements would be monitored to allow managers to adapt to watershed conditions. Monitoring would show whether BMPs and design elements were being implemented and whether they were effective at maintaining water quality.

In addition to actions which maintain water quality, the West End OHV Project proposes to restore water quality by eliminating cross-country OHV travel and reduce stream crossings which are used by OHVs.

Because of the use of Best Management Practices and Standard Operating Procedures to maintain existing water quality, and the elimination of cross-country OHV traffic and reduction of miles of roads and stream crossings used by OHVs, all the alternatives of the West End OHV Project comply with the Clean Water Act and the Forest Plan.

### 303(d) Listed Streams

Section 303 of the Clean Water Act requires the states to list the streams whose use is impaired because they do not meet water quality standards. The water quality standards which may be affected by OHV use off of roads, on designated roads and trails, and OHV trail construction are stream temperature from shade reductions in riparian areas and sedimentation and turbidity from roads, trails, and altered stream banks.

Table C-1. 303 (d) List for West End OHV streams in Lower John Day Basin (Oregon DEQ, 2006).

Stream	River Mile	Parameter	Criteria
Brown Creek	0 to 9.5	Temperature	Rearing, migration, 18 C
Henry Creek	0 to 7.1	Temperature	Rearing: 17.8 C
Stahl Canyon	0 to 5.7	Temperature	Rearing: 17.8 C

Table C-2. 303 (d) List for West End OHV streams in North Fork John Day Basin (Oregon DEQ, 2006).

Stream	River Mile	Parameter	Criteria
Big Wall Creek	0 to 21.3	Sediment/Temperature	Rearing, spawning, aquatic life, migration, 18 C
Indian Creek	0 to 5.4	Temperature	Rearing, migration, 18 C
Porter Creek	0 to 7.4	Sediment	Rearing, spawning, aquatic life
Wilson Creek	0 to 10.7	Sediment/Temperature	Rearing, spawning, aquatic life, 17.8 C

The water quality standards which may be affected by the West End OHV Project are stream temperatures and sedimentation. Stream temperatures may be affected when cross country OHV use in RHCAs damages shade producing vegetation. Stream sedimentation may be affected by cross country OHV use in RHCAs, by OHV use on designated roads and trails, and by OHV trail construction.

OHV use under the 1992 Access and Travel Management Plan has the potential to reduce stream shade and increase stream sedimentation. Observations in the area indicate that shade reductions have resulted primarily from timber harvest, road construction, and cattle grazing before 1990. They also indicate that sedimentation has resulted primarily from road construction and cattle grazing prior to 1990, and current road use. Shade reductions and sedimentation related to OHVs has not been extensive, but has been documented.

Prohibiting cross country OHV traffic would greatly reduce the potential effects to water quality from OHVs. However, because the shade reductions and sedimentation related to OHV use do not appear to be extensive, it is not expected that any of the 5 Alternatives would affect 303 (d) listing status.

### Executive Order 11988 and 11990: Floodplains and Wetlands

Executive Order (EO) 11988 requires the Forest Service to avoid "to the extent possible the long and short term adverse impacts associated with the ... occupation ... or modification of

floodplains...” The West End OHV Project does not propose to occupy or modify any floodplain. For this reason, the West End OHV Project is consistent with this EO.

Executive Order (EO) 11990 requires the Forest Service to "avoid to the extent possible the long and short term adverse impacts associated with the ... destruction or modification of wetlands." The West End OHV Project does not propose to destroy or modify any wetlands. For this reason, the West End OHV Project is consistent with this EO.

### **Executive Order 11990 and 11989**

The Forest Plan in line with national direction for travel management is provided by Executive Order (E.O.) 11644 (February 8, 1972) as amended by E.O. 11989 (May 24, 1977). These executive orders direct federal agencies to “ensure that the use of off-road vehicles on public lands will be controlled ... to protect the resources ... promote safety ... and minimize conflicts ...” Forest Service rules at 36 CFR Part 295 (2007) codify the requirements in E.O. 11644 and E.O. 11989. The West End OHV project analyses the effects of OHVs on individual resources, considered effects to other users, and identifies a designated system for OHV use within the project area. For this reason the selection of any alternative in the West End OHV project would meet these regulations.

### **Executive Order 13186: Neotropical Migratory Birds**

This section incorporates by reference the West-End OHV Terrestrial Wildlife Report and Biological Evaluation contained in the project analysis file located at the Heppner Ranger District.

The *Partners in Flight Bird Conservation Plan* is used to address the requirements contained in Executive Order (EO) 13186 (January 10, 2001), Responsibilities of Federal Agencies to Protect Migratory Birds. Under Section 3(E) (6), through the National Environmental Policy Act, the Executive Order requires that agencies evaluate the effects of proposed actions on migratory birds, especially species of concern. *Partners in Flight Conservation Planning* allows the analysis of effects of proposed projects on neotropical migratory birds through the use of guidelines for priority habitats and bird species of concern for each planning unit. The conservation strategy does not directly address all landbirds species of concern, but instead uses “focal” species as indicators to describe the conservation objectives, and measures project effects in different “priority” habitats for the avian communities found in the planning unit. The Umatilla National Forest occurs in the Northern Rocky Mountain Landbird Conservation Planning Region, which includes the Blue Mountains sub-region and the Blue Mountains sub-province. Conservation planning for the Blue Mountains, Ochoco Mountains, and Wallowa Mountains sub-provinces is addressed in the Conservation Strategy for Landbirds in the Northern Rocky Mountains of Eastern Oregon and Washington (Altman 2000).

Activities under all alternatives would be designed using the above strategy, and therefore would be consistent with Executive Order 13186. See the Neotropical Migratory Birds section in this EA or the wildlife specialist report for further discussion of effects on neotropical migratory birds.

### **Civil Rights, Minority Groups and Environmental Justice**

This project does not propose to provide a quantitative output, lack of output, or timing of output that would affect the civil rights, privileges, or status quo of consumers, minority groups, low

income populations, or women. This project does not affect classes of persons who are USDA employees or program beneficiaries (CRIA, Project File).

## **National Forest Management Act**

The West End OHV project is consistent with the National Forest Management Act (NFMA) (36 CFR 219.8(e)).

## **Forest Plan Consistency**

There are eight Forest Plan management area designations within the project area. OHV use is either restricted or limited in five of these management areas. Alternative 1, or the implementation of the 1992 *Motorized Access and Travel Management Decision*, would comply with the prohibition of OHVs in management area D2 and the restriction of OHV travel on designated routes in the C1 and C5 management areas and the winter closures of the C3 management area. Alternative 1 does restrict OHVs to specific roads within the developed recreation site but may not fully consider conflict between users in this area. Cross country travel within the E1 management area is consistent with the Forest Plan standard, permitting OHV use within the management area.

Alternatives 2, 3, 4, and 5 comply with all Forest Plan standards in all 8 management areas. All routes are designated and cross country travel would not be allowed (see Chapter 1 for Forest Plan standards and guidelines; goals and desired future conditions; relevant to OHV route designation).

This project addresses moving toward the desired future conditions of recreational activities including OHV recreation while protecting other resources including fisheries, terrestrial wildlife, soils, water, cultural resources, landscape characteristics, forest vegetation, and other social resources valued today and in the future. Specifically the analysis identifies areas for loops, closed system roads to be used as OHV trails, and address areas where conflicts between OHV use and big game could occur. Most roads and trails would be closed to OHV use in the big game winter range (C3). OHV use in designated old growth (C1) would be limited to designated routes. Recreational opportunities would be road oriented with several designated roads and trails located within the A4 Viewshed area along State Highway 207.

## **Wildlife**

Vegetative treatment aimed at altering forest structure and composition would not occur under any of the alternatives. The Forest Plan has no specific standards and guidelines for late and old structure habitat and connectivity in relation to motorized recreation.

No vegetative treatment or dead wood removal (fuels treatment/ reduction) with a potential to impact dead wood would occur under any of the action alternatives.

Analysis of management indicator species and biological evaluations of threatened, endangered and sensitive species can be found in the wildlife section. This project would not contribute towards federal listing for any threatened, endangered or sensitive terrestrial wildlife species.

Under the action alternatives, HEI would increase in both the E1 and C3 management areas in response to the elimination of cross country travel. HEI in the E1 management area would meet standards and would be consistent with the Forest Plan. While HEI in the winter range (Kahler and Monument) would continue to be below Forest Plan standards, it would improve under these alternatives, and would therefore be consistent with the Forest Plan.

## **Hydrology**

All alternatives comply with the Forest Plan standard to meet the Clean Water Act and comply with existing State laws for beneficial water use.

## **Fish and Aquatic Habitat**

All action alternatives are consistent with Forest Plan direction regarding fish and riparian areas for permitted activities and allowable effects for both C5 and general forest standards and guides. None of the potential combined effects are expected to adversely affect PacFish Riparian Management Objectives or steelhead/redband trout population viability. All designated trails will be operated in a manner to be consistent with Pacfish RMOs or trails will no longer be used. Application of PacFish direction would maintain or improve fish habitat conditions in the analysis area. OHVs in all alternatives are only allowed on designated trails in riparian areas.

These alternatives are also consistent with the Basinwide Salmon Recovery Strategy (All-H Strategy) as it requires following existing management direction in the short-term and following ICBEMP science in the long-term. These alternatives are also consistent with Wy-Kan-Ush-Mi Wy-Kish-Wit --- The Columbia River Anadromous Fish Restoration Plan of the Nez Perce, Umatilla, Warm Springs and Yakama Tribes. This restoration plan recommends that federal agencies follow existing land use and water quality laws and regulations – this would include the PacFish amendment of the Forest Plan.

## **Botany**

The 1990 Land and Resource Management Plan for the Umatilla National Forest requires that all project areas be inventoried for endangered, threatened and sensitive plant species and that if endangered, threatened and sensitive plant species are present, a biological evaluation (BE) must be prepared. A Biological Evaluations was completed for this project. The proposed action and any action alternatives would not contribute towards federal listing for any listed plant species. The only Alternative that may impact sensitive plants in the project area, is the 'no action' alternative. The proposed West End OHV project is in compliance with the Land and Resource Management Plan for the Umatilla National Forest.

## **Other Jurisdictions**

There are a number of other agencies responsible for management of resources within the West End OHV project area. The Oregon Department of Fish and Wildlife is responsible for management of fish and wildlife populations, whereas the Forest Service manages the habitat for these animals. The Oregon Department of Fish and Wildlife has been contacted regarding this analysis.

The Environmental Protection Agency is responsible for enforcement of environmental quality standards, such as those established for water resources, while the Oregon Department of Environmental Quality sets standards, identifies non-point sources of water pollution, and determines which waters do not meet the goals of the Clean Water Act. The Forest Service and Oregon Department of Environmental Quality have signed a Memorandum of Understanding to meet state and federal water quality rules and regulations (2002).

This project meets Forest Plan requirement for the protection of cultural resources through avoidance of known sites and has consulted with the State Historic Preservation Office under the Programmatic Agreement dated March 10, 1995.

### **Unavoidable Adverse Effects**

Implementation of any of the alternatives would inevitably result in some adverse environmental effects. The severity of the effects would be minimized by adhering to the direction in the management prescriptions and Standards and Guidelines in Chapter IV of the Forest Plan and additional design elements proposed in Chapter 2 of this document. These adverse environmental effects are discussed under each resource section of this EA.

### **Short-term Use and Long-term Productivity**

Short-term uses are generally those that determine the present quality of life for the public. In the Pacific Northwest, this typically includes: timber harvest, livestock grazing, recreation, transportation, utility corridors, and wildlife habitat. Long-term productivity refers to the land's capability to support sound ecosystems producing a continuous supply of resources and values for future generations.

The short term uses affected by this project would include recreation, transportation and wildlife habitat. All uses would remain similar between alternatives with a primary emphasis on one or more of these uses.

The long-term productivity affected by this project is limited to the immediate areas where OHV use would occur. Cross country travel by OHV is eliminated and replaced by designated trails located on closed roads, existing but undocumented OHV trails, or newly developed trails located in specific locations. Long-term productivity would be increased by all action alternatives through the elimination of cross country travel and the designation of the OHV system. Newly developed trails in each action alternative could result in long-term productivity loss relative to the total miles added but would be less than expected under the no action alternative. It is expected that 3.9 acres of detrimental soil disturbance would occur as a result of all new trail construction in alternative 4. Over time this could result in loss of long-term productivity on those 3.9 acres. Alternative 2 and 5 would result in 2.9 and 2.5 acres respectively of potential loss of long-term productivity.

### **Irreversible and Irretrievable Effects**

An irreversible commitment of resources refers to a loss of future options with nonrenewable resources. An irretrievable commitment of resources refers to loss of opportunity due to a particular choice of resource uses.

The soil and water protection measures, included designated trail locations, are designed to avoid or minimize the potential for irreversible losses from the proposed designated OHV system.

The designation of closed roads to be used as OHV trails does not eliminate these roads from the travel system.

Concerning threatened and endangered plant, wildlife, and fish species, a determination has been made that the proposed actions would not result in irreversible or irretrievable commitment of these resources.