Manti – La Sal
National Forest Plan Revision
Drivers and Stressors

Wildlife

Prepared by:

Jeff Jewkes
Wildlife Biologist

for:

The Manti – La Sal National Forest

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1. Stressor or Driver Description

Increased Human Population and Increased Forest Uses

A way to evaluate the impacts from an increase in the human population is to focus on the increase in forest uses, primarily recreation. Unmanaged motorized recreation has the biggest impacts on soil, vegetation, or aquatic systems. By impacting habitat components, people affect an animal's food supply and availability as well as shelter, or living space. In turn, impacts on food and living space influence behavior, survival, reproduction, and/or distribution (Cole and Landres 1995).

An increase in the number of people recreating can heighten the affects to wildlife and wildlife habitat in a variety of ways. Direct impacts can occur, such as loss of available habitat, or modify behaviors such as reactive 'flight' and altered foraging and reproductive behaviors. Indirect impacts can also occur, such as habitat change and the introduction of pests, pathogens and weeds. Increased forest users can lead to an increase in traffic on Forest system roads and noise levels in areas that may disturb or displace certain wildlife species into areas of less optimal habitat. As an area exceeds its recreational capacity, users will seek new areas of opportunity that previously had little recreational use. This increased use can interrupt certain biological functions during critical life stages, at certain times of the years, for some wildlife species. Also, an increase in use may impact habitat directly (by the removal of forage, cover, water, etc.) as a result of camp site expansion and an increase in user created trails, leading to habitat fragmentation.

Some species may tolerate disturbance better than other species; however, this depends on the time of year when the disturbance occurs. Larger species, such as elk and deer, may habituate better to noise and traffic during the summer and fall, due to their ability to move longer distances. They are more sensitive to disturbance during the spring when calving and fawning occurs and also during the winter months when food is less available, of poor quality, and they are burning through stored fat and losing weight. Smaller animals may be more susceptible at all times because they have smaller niches and are confined to smaller areas where movements are impossible. Additionally, roads and trails result in 'gaps' between suitable habitat locations. Larger 'gaps' result in increased risk for small animals as they move between locations.

2. Indicators

Habitat quality/Habitat Connectivity

- Road and Trail Density (Miles)
- Unauthorized Trail Density (Miles)
- Number of forest visitors

3. Scale

The scale would be the LTA's at a course scale and forest vegetation types at a fine scale. The recreation zones may also be used to make connections to recreation uses.

4. Existing Condition of the Indicators

The Manti- La Sal National Forest is comprised of a variety of vegetation types creating habitat for an array of wildlife species. Vegetation types can be broken down into nine different types or classifications across the forest. Within these major types, there are several sub-classifications. These nine vegetation types include: alpine, aspen/mixed conifer, barren rock, mixed conifer dry, spruce fir conifer, perennial forb/grasslands, woodlands, riparian wetlands, and sagebrush lands (reference veg write-up).

Many different types of recreation can be observed throughout these different vegetation types, whether it is bouldering and rock climbing within the barren rock and cliff habitats, hunting and fishing in the alpine, aspen/mixed conifer, and spruce fir conifer types, shed antler gathering within the woodlands and sagebrush lands, or motorized recreation which covers nearly all of these types.

Habitat Quality

Road and Trail Density

Roads and trails can affect wildlife habitat quality by fragmenting habitat and as forest use increases, disturbance from an increase in traffic on Forest system roads and an increase in noise levels in areas may displace certain wildlife species into areas of less optimal habitat. An increase in forest use is leading to an increase in unauthorized motorized trails across the forest. These unauthorized trails can reduce the size of refugia for a number of wildlife species and can affect habitat quality. The tables below show the miles of roads across the forest and the current miles of unauthorized motorized trails.

Table 1. Miles of road by District.

Maintenance Level	D1 – Sanpete District Miles of Road Per Maintenance Level	D2/D3 – Ferron/Price District Miles of Road Per Maintenance Level	D4/D5 – Moab/Monticello District Miles of Road Per Maintenance Level
ML 1	68	18	245
ML 2	688	243	744
ML 3	757	86	67
ML 4	2	2	0
Total Miles	**1,515**	**349**	**1,056**

Unauthorized Trails

Table 2. Inventory of user-created routes (miles) since 1986.

District	Zone	miles	sq miles	Miles per sq mile
1	Sanpete North	78.8	133.05	0.59
1	Sanpete South	128.02	153.06	0.84
1	Sanpitch	61.85	119.29	0.52
2	Ferron/ Muddy Creek	168.88	307.37	0.55
3	Millers Flat/ Joes Valley/ Huntington Canyon	221.71	445.26	0.50
3	Spanish Fork/ Scofield	108.57	201.89	0.54
4	Carpenter Ridge/ Buckeye	14.78	50.15	0.29
4	Gateway	15.37	33.49	0.46
4	La Sal Loop/ Moab Front	34.71	138.09	0.25
4	Two Mile	87.49	50.72	1.72
5	Abajo/ Hearts Draw	49.2	177.19	0.28
5	Dark Canyon Wilderness	0	72.39	0.00
5	Elk Ridge	39.12	326.09	0.12
	Total miles	**1008.50**		

5. Trends

Motorized recreation use has grown exponentially across the West since the time the last Forest Plan was written in 1986. According to a paper prepared by the Institute of Outdoor Recreation and Tourism the use of off-highway vehicles (OHVs) for recreation and other outdoor activities has exploded in popularity over the past two decades. The number of registered OHVs in Utah more than tripled in eight years alone, from 51,686 in 1998, to 172,231 in 2006, a 233% increase (Smith, Burr, Reiter, Zetlin, 2009). This use peaked at 232,000 OHV's and has since declined to 187,000 in 2015.

Concurrent with the increase in registered OHV's, an increase in new trail construction has occurred to manage the motorized use demands. Unauthorized user-created motorized routes have also increased dramatically. Currently there are 3,418 inventoried unauthorized routes across the forest totaling 1008 miles.

New trails constructed since 1986 when the Forest Plan was put into place, include 53.1 miles of motorized trail, all within the North Zone of the Forest, 38.7 miles of non-motorized trails all within the La Sal Loop/Moab Front area of the South Zone, and 26.5 miles of non-motorized trails on the North Zone. It is projected that future new trail construction will be restricted to key connections forming loops and reconstruction following major disturbances, such as the 2012 Seeley Fire. Emphasis will instead be placed on maintaining and improving the existing trail system and right-sizing the existing system including decommissioning some trails or managing them as primitive routes with minimal or no maintenance.

Table 3. Changes in motorized use levels over nine years in the Arapeen OHV Trail System.

Trail Name	Number of Days Monitored 2005	Number of Riders 2005	Number of Days Monitored 2013	Number of Riders 2013
Reeder Canyon	105	1708	92	1908
Lake Canyon #10	125	4258	130	4406
George's Fork	90	1456	86	2047
Black Fork	115	1239	105	1284

6. Resources Affected

- Water quality (Hydrology)
- Soils- increased erosion
- Wildlife Habitat – increased fragmentation, loss of habitat and refugia, species displacement, increases in invasive species.
- Wildlife Populations - impacts on productivity, species diversity, increased stress on species, changes in life-cycle habitat use
- Range Management

7. Management Tools

- Limit campsite expansion by installing barriers
- Reduce erosion around campsites by hardening sites, close sites impacting fragile ecosystems like streams and wetlands.
- Close user created trails and multiple access routes to sites.
- Improve trails to reduce erosion.
- Educational kiosks
- Designate play areas for motorized recreation (ex... learner loops) while restricting certain types of use in more sensitive areas.

Some Tools to consider to improve wildlife habitat:

- Thinning forests
- Travel mgmt. – TAP – managing the road system
- Prescribed fire
- Recreation management
- Grazing management
- Homeowners allowing WUI thinning
- Stream improvements- woody debris, shade, culverts
- Monitoring sites for climate change effects (temps, precip, depositions of pollutants)

8. Stressor Accumulation

The following stressors, when combined with increased populations and increased forest users, can have measurable impacts to wildlife habitats, including habitat quality and connectivity.

- Increased recreation demands
- Wildfire potential and areas of high risk
- Road development for mineral exploration
- Climate change
- Groundwater withdrawals
- Insects and disease
- Tree encroachment

9. Identify any Data Gaps

10. Literature Cited

Cole, David N., and Peter B. Landres. "Indirect effects of recreation on wildlife." Wildlife and recreationists. Coexistence through management and research (1995): 183-202.

Switalski, Adam T., and Allison Jones. 2012. Off-road vehicle best management practices for forestlands: A review of scientific literature and guidance for managers. Journal of Conservation Planning Vol 8 (2012) 12 – 24.