

## **APPENDIX E**

### **Management Actions Contributing to Cumulative Effects**



## **MARTIN BASIN RANGELAND PROJECT CUMULATIVE EFFECTS ACTIVITIES**

### **Cumulative Effects Area**

The Cumulative Effects Analysis Area for the Martin Basin Rangeland Project includes all public and private lands within the boundaries of the Santa Rosa Ranger District, Humboldt-Toiyabe National Forest. This area is approximately 300,000 acres in size and includes the high elevation lands of the Santa Rosa Mountains. This area includes a wide range of habitats for various wildlife and fish species that may occur within the project area. This area also includes all activities and management actions that are authorized on both public and private lands within the boundaries of the Santa Rosa Ranger District. Lands outside of this boundary are generally lower elevations with the corresponding vegetative communities associated with those elevations. If an alternative cumulative effects area is utilized during the analysis of a specific resource, that area will be described within the specific specialist report.

### **Mining/Mineral Exploration**

#### **Past**

Historically, mining activity was scattered throughout the cumulative effects area. In most cases the mines were small and limited to small underground operations that lasted for only short periods of time. More concentrated mining activity and associated developments occurred in the vicinity of Buckskin Mountain on the Martin Basin Allotment, the National Mining District on the West Side Flat Creek Allotment and Spring City on the Buttermilk Allotment. Runoff and perennial water flow from mine tailings on the National Mining District on private lands and from the Buckskin Mine on Forest Service administered lands have historically resulting in acid mine drainage and heavy metals entering the North Fork of the Little Humboldt River and Eightmile Creek. The Forest Service is currently working on a remediation project to address the concerns at the Buckskin Mine site. This project will be implemented over the next 2-3 years.

#### **Present**

There are currently no active mines on the Santa Rosa Ranger District. Active exploration is either planned or ongoing near Buckskin Mountain on the Martin Basin Allotment and on public and private lands near the National Mining District on the West Side Flat Creek Allotment. During 2006, exploration activities on Buckskin Mountain resulted in an unauthorized release of drilling fluids into the North Fork of the Little Humboldt River. Cleanup activities were initiated by the responsible parties almost immediately and have been ongoing. Cleanup activities occurred under the direction of the Nevada Department of Environmental Protection in cooperation with the Forest Service, Nevada Department of Wildlife, and others. Exploration activities have concluded near Buckskin, and all roads and drill pads have been fully recontoured and seeded with a native seed mix. There have been no other exploration proposals submitted to date.

### Foreseeable Future

As long as gold prices remain high, it is likely that the Santa Rosa Ranger District will continue to see limited interest in exploration activities near Buckskin Mountain and in the National Mining District. There are currently no proposals being considered for mines within the cumulative effects area.

## **Livestock Developments**

### Past

Livestock developments include fences, water developments (both troughs and ponds) and other structures that have been developed to improve the management of livestock. Many of these developments were first constructed during the early 1900s as allotments were first developed to manage livestock grazing on the Santa Rosa Ranger District. The number of water developments and fences increased throughout the 1900s to improve the control and management of livestock on the District. A map showing all existing fences and water developments has been included in the project record.

### Present

Reconstruction of water developments and fences occurs over time. Some of these developments are occasionally relocated to improve or protect resources. Currently the following projects are in the planning phases or being developed and would involve the construction of new fences or water developments. The Cabin Creek Watershed Project on the Martin Basin and Bradshaw Allotments will involve the reconstruction of approximately 3 miles of fence, the construction and/or relocation of approximately 8 miles of fence and the ultimate removal of approximately 9.5 miles of fence. At the completion of the project, there will be a reduction of approximately 1.5 miles of fence.

Livestock developments including water developments and fences typically improve distribution of livestock and can reduce the concentration of livestock along streams and in riparian areas. These improvements can help to increase the rate of recovery of riparian vegetation and the stability of stream banks. As an example, in the 1990s, the addition of fencing on the Quinn River Allotment to create the riparian pasture and associated management changes resulted in a dramatic increase in the rate of recovery of the riparian areas along the East Fork of the Quinn River.

### Foreseeable Future

Additional water developments and fences may be required on allotments within the cumulative effects area to ensure appropriate management of livestock. The current needs or locations of additional developments are not known at this time.

## **Roads, Trails, Vehicle Uses**

### Past

Historically, roads on the Santa Rosa Ranger District developed as a result of mining activities, recreation, hunting, livestock management, fire suppression activities, and for land management. Many of the developed roads were constructed by the Civilian Conservation Corps. In the past roads were lightly used with minimal recreational use. In more recent years, recreational use has increased including the use of off-highway vehicles (OHVs). Although use has increased, it has generally been considered light compared to other Forest Service ranger districts.

There are approximately 40 miles of recreational trails within the cumulative effects area. These trails were originally developed for forest management and livestock allotment management. Recreational use of trails was generally light historically. In more recent years, the recreational use remains light, however, the management focus of these trails is primarily for recreational use. The District's trails are primarily located within and adjacent to the Santa Rosa – Paradise Peak Wilderness Area on the southern portion of the District.

### Present

On December 13, 2007, Forest Supervisor Ed Monnig signed a Decision Notice and Finding of No Significant Impact (FONSI) approving the Santa Rosa Travel Management Project. Under this project a system of motorized roads and trails was designated and off road travel was restricted. The designated system of roads and trails includes 310.5 miles of road and 16.54 miles of motorized trails. A formal travel map has been printed and is available at the Santa Rosa Ranger District office in Winnemucca, Nevada.

There are currently no plans to construct additional recreational trails within the cumulative effects area. Management activities associated with the current trail system are limited to minimal trail maintenance about one out of every three years.

The approval and implementation of the Santa Rosa Travel Management Plan will reduce impacts on vegetative communities associated with unrestricted off-road travel. There will also be a reduction in soil erosion. Impacts associated with disturbance to wildlife species will also decline as unrestricted off road travel is eliminated and unauthorized roads are closed.

### Foreseeable Future

The only foreseeable road construction within the cumulative effects area would be temporary roads associated with mineral exploration activities. There are no additional plans for the construction of any roads or motorized trails at this time.

Planning is currently ongoing related to implementation and enforcement of the Travel Management decision. These actions will include public education, signing of open roads and trails, rehabilitation of closed or unauthorized roads, and enforcement activities.

## **Water Diversions**

### **Past and Present**

There are three water diversions within the cumulative effects area. These diversions are located on National Forest System lands in McConnell Creek, a historical ditch on Buttermilk Creek, and a small diversion on private lands in Willow Creek.

Water developments and pipelines associated with livestock management and wildlife habitat improvements are described in other sections of this document.

### **Foreseeable Future**

There are no plans or proposals for future water diversions on National Forest System lands, excluding those associated with providing water for livestock or wildlife. There are also no known proposals to divert water associated with private lands within the cumulative effects area.

## **Special Uses**

### **Past and Present**

Historically the Santa Rosa Ranger District has had minimal special use activities. Currently special uses include:

- Outfitting and Guiding permits.
- Three recreational residences along Road Canyon Creek.
- Three isolated cabins.
- Communications site permits on Hinkey Summit and Buckskin Mountain.
- An organizational 4-H Camp on Hinkey Summit.

### **Foreseeable Future**

No additional special use activities beyond those identified above are expected to be permitted in the foreseeable future on the Santa Rosa Ranger District.

## **Fuelwood Harvest**

### **Past and Present**

The Santa Rosa Ranger District has historically and currently issues very limited permits for the harvest of fuelwood. Fuelwood permits are limited to the harvest of dead and down aspen. On an average year the District sells approximately 25-50 cords. Limited firewood is also cut for use in campfires on the District. This use is also considered minimal with only limited impacts due to the low recreational use levels.

### **Foreseeable Future**

Fuelwood harvesting levels are expected to remain relatively stable into the future.

## **Wildfire and Rehabilitation Following Wildfires**

### Past

Historically, very few wildfires start within the boundaries of the Santa Rosa Ranger District. In general, between one and four new fires start within the District boundaries each year. The District has been historically affected by large, fast moving wildfires that start on lower elevation BLM and private lands. Lower elevation lands below 6,000 feet on the northern, western, and southern district boundaries are infested with cheatgrass. Wildfires start in these lower elevations and move upslope, driven by winds onto the Santa Rosa Ranger District. These wildfires are often very large and generally have little to no mosaic pattern to the burn. The higher elevations above 6,000 feet typically recover to native grasslands. Eventually sagebrush and other browse species return to the site. Lower elevations below 6,000 feet are often dominated by cheatgrass and are at risk for a short fire return interval. The Vegetation Specialist Report (found in the project record) contains a map and excel document that shows the location and size of historical fires within and adjacent to the Santa Rosa Ranger District.

Rehabilitation actions have generally been limited following wildfires on the Santa Rosa Ranger District. Following the 2001 Upper Willow Fire, a number of roads were rehabilitated to prevent erosion. Fences were repaired, noxious weeds were treated, and approximately 7,000 acres of low elevation lands were aerial seeded. The seed mix included a variety of native grass, forb, and shrub species to stabilize slopes and give native species a jumpstart to compete with cheatgrass. The Nevada Department of Wildlife also provided Forage Kochia seed for the mix to compete with the cheatgrass and to provide forage for wildlife species in the area. The entire burn area was rested for 2 years and some areas were rested for 3 years to provide additional recovery time.

Following the 2005 North Road Fire, rehabilitation activities included seeding native species along the lower elevation National Forest Boundary and along riparian areas which burned at higher intensities. A number of fences were repaired and noxious weeds were aggressively treated to minimize infestations. Burn areas have been rested for a minimum of 2 years after the wildfire.

Rehabilitation activities following wildfires have assisted in restoring perennial vegetation in burned areas. Two or more years of rest have allowed vegetative resources including riparian areas to recover following fires. Rehabilitation of roads has reduced the potential for soil erosion and minimized the impacts on water quality. The aggressive treatment of noxious weeds has helped to minimize the spread of noxious weeds following wildfires.

### Present

Currently, the western and northern portions of the Santa Rosa Ranger District are generally at greatest risk from wildfires. Based on historical patterns and current conditions the following Allotments are at highest risk related to large-scale wildfires:

- Buffalo Allotment
- Granite Peak Allotment
- Indian Allotment
- Quinn River Allotment
- Rebel Creek Allotment

- West Side Flat Creek Allotment

The following allotments are at low to moderate risk for large-scale wildfires:

- Buttermilk Allotment
- Lamance Allotment
- Martin Basin Allotment
- North Fork Allotment
- Paradise Allotment
- Wild Bill Allotment

#### Foreseeable Future

Wildfires will likely continue to impact resources within the boundaries of the Santa Rosa Ranger District. The locations and timing of potential wildfires in the future cannot be predicted and are therefore not foreseeable.

### **Prescribed Fire/Vegetation Treatments**

#### Past

Over the past 30 years, vegetation treatments including prescribed fires, mechanical treatments and seedings have been limited on the Santa Rosa Ranger District. Small prescribed burns were also conducted within the District boundary. These treatments were typically less than 500 acres and all have generally returned to sagebrush communities. No prescribed fire projects are known to have occurred within the cumulative effects area between 1985 and 2005.

During the mid 1900s, sagebrush communities were mechanically treated and seeded with various non-native seed mixtures at various locations around the District. Today these areas are primarily dominated by sagebrush communities; however, non-native grass species are still present on the sites.

#### Present

In 2005, the Santa Rosa Ranger District approved the Buttermilk Prescribed Burn Project on the Martin Basin, Buttermilk, and Bradshaw Allotments. This project approved up to 4,500 acres of treatments within mountain big sagebrush communities. In 2005, approximately 500 acres were treated with prescribed fire within Unit 1 of the project area. In 2006, approximately 1,600 acres were treated with prescribed fire within Units 4 and 8 of the project area. Monitoring of the treated areas has shown excellent recovery of native grass and forb species. Beneficial shrubs such as serviceberry and snowberry are abundant within portions of the burn areas and young sagebrush seedlings are beginning to appear in the treated areas. Monitoring has also shown little to no occurrence of cheatgrass and no occurrences of noxious weeds within the treated areas. The treatments are considered a complete success.

In 2006, the Santa Rosa Ranger District approved the Buttermilk Mechanical Treatment Project. This decision approved the mechanical treatment and seeding of approximately 1,000 acres of sagebrush communities to improve vegetation conditions in Unit 6 of the project area, which is located in the Cabin Creek Pasture in the Martin Basin Allotment. In October of 2006, the District treated approximately 600 acres within the Martin Basin Allotment using a Dixie Harrow

pulled by a large tractor. The area was seeded with a native seed mix and was rested from grazing for 2 years. In 2007, the first year following treatment, some unauthorized grazing occurred and vegetative response was limited due to severe drought conditions. In 2008 moisture conditions had improved and the vegetation response was considered a complete success with abundant native grasses and forbs.

In September of 2008, approximately 50 acres within Unit 5 (which is located in the Long Valley Pasture in the Martin Basin Allotment) were treated and seeded using a Lawson Aerator. The implementation was successful, however, the response of the vegetation will not be known for 1-2 years.

From September to November of 2008, the District has actively been implementing the South Fork of the Quinn River Restoration Project. This project involves creating approximately 9 miles of 100-foot wide greenstrip and fuelbreak within the South Fork of the Quinn River on the Indian Allotment. This project is intended to break the cheatgrass fire cycle to allow recovery of the watersheds which have burned in the recent past. Additionally, this project will protect high value and intact sagebrush communities within portions of the Quinn River, North Fork, and Martin Basin Allotments.

The vegetation treatments identified above may have had short-term adverse effects on wildlife species, vegetative communities, and a short-term increase in bare ground. These adverse impacts have generally been for one year or less. Over the long term, these projects have resulted in an improvement in the diversity of vegetative communities with multiple age classes. There has been a reduction in bare ground and reduced potential for soil erosion.

#### Foreseeable Future

Under the Buttermilk Prescribed Burn Decision an additional 2,400 acres could be treated with prescribed fire. However, there are no current plans at this time to conduct additional treatments. Monitoring the existing treatments is being emphasized. While prescribed fire is a treatment method that could be used in the future within the cumulative effects area to treat vegetation, there are no plans for additional projects at this time.

An additional 400 acres may be treated with mechanical methods within Unit 5 in the Martin Basin Allotment. Although those treatments are not currently in the planning stage, they are likely to be considered within the foreseeable future. While other mechanical treatment projects are not currently being planned, additional treatments could be used in the foreseeable future.

### **Noxious Weed Treatments**

#### Past and Present

Noxious weeds on the Santa Rosa Ranger District and within the cumulative effects area include Scotch thistle, musk thistle, Canada thistle, hoary cress, Russian knapweed, yellow toadflax, and medusahead grass. The Santa Rosa Ranger District has historically and currently uses both chemical and biological (insects) methods to treat noxious weeds. Noxious weed infestations are generally less than 10 acres in size. Historically, the District has treated between 500 and 2,000 acres of noxious weeds annually within the cumulative effects area. The District has maintained

one of the most aggressive noxious weed treatment programs within the state of Nevada and has worked closely with county, state and federal agencies as well as with private landowners.

#### Foreseeable Future

The Santa Rosa Ranger District will continue to annually treat noxious weeds using both chemical and biological methods. The number of acres treated should remain relatively stable in future years and may decline as weed infestations are eradicated.

### **Developed and Dispersed Recreation**

#### Past and Present

Developed and dispersed recreational uses within the cumulative effects area are considered light when compared to other similar Forest Service ranger districts. Developed recreational activities are currently limited to the Lye Creek Campground within the Buttermilk Allotment. The Lye Creek Campground is a 13-site campground which receives relatively light use and covers approximately 10 acres.

Dispersed recreational uses in the cumulative effects area include hiking, camping, horseback riding, ATV use, hunting, fishing, snow machine use, and other various minor uses. Dispersed recreational use is very limited in the cumulative effects area. The heaviest use periods include several of the busier weekends during the summer and hunting seasons. Currently ATV use is low with limited impacts; however, this use is increasing with the popularity of ATVs.

#### Foreseeable Future

There are no plans for additional developed recreational sites within the cumulative effects area. In the future dispersed recreational uses such as hiking, camping, horseback riding, ATV use, snow machine use, and other various minor uses are expected to increase slightly over current levels. Hunting and fishing use is expected to remain at stable levels into the future.

### **Wildlife and Fisheries Habitat Improvement Projects**

#### Past

The following is a list of habitat improvement projects that have occurred in the recent past:

- One wildlife guzzler was constructed over 20 years ago within the Quinn River Allotment. In 2007, this guzzler site was reconstructed and repaired. During the summer of 2008, the site was visited and the guzzler was nearly full and was receiving noticeable wildlife use.
- Long Canyon Creek instream structures were installed during the 1980s on the North Fork Allotment to increase pool habitats for the threatened Lahontan cutthroat trout. Many of these structures were removed in 2003 due to structural failures. Those structures which were still functioning properly were left within the stream to continue to provide habitat.

- In 2006, the Three Mile Riparian Exclosure was built to improve habitats for the threatened Lahontan cutthroat trout on the West Side Flat Creek Allotment. This 1-mile long exclosure excludes livestock from the lowest third of the stream where riparian concerns exist as a result of cattle concentrating along the stream. In 2007, cottonwood seedlings were planted along the stream within the exclosure. Site visits in the area during 2007 and 2008 indicate that the condition of riparian vegetation appears to be improving and streambanks are showing slight improvement in stability.
- In 2007, the District implemented a small wetland project on the Martin Basin Allotment. An old stock pond was dredged to provide wetland habitats for birds, amphibians, and other wildlife species. The pond and associated spring were then enclosed within a 5+-acre exclosure to protect the site from livestock grazing impacts. During site visits in 2008, waterfowl and shorebirds were observed using the site and the pond contained thousands of Pacific chorus frog tadpoles.

### Present

- The District is currently in the planning phases for the North Fork of the Little Humboldt River Restoration Project. This project will restore portions of the river back to its original channel, stabilize streambanks, and plant new riparian vegetation. Several large headcuts will also be reshaped and stabilized to restore riparian function.

The wildlife projects identified above have improved the condition of a variety of wildlife habitats, particularly wildlife habitats associated with streams, meadows and springs. These projects have also resulted in improved condition of important vegetation communities and reduced the impacts from other activities such as livestock grazing. Improvement in the vegetative conditions will result in reduced potential for soil erosion and improved water quality associated with stable streambanks and a reduction in sedimentation.

### Foreseeable Future

Future wildlife and fisheries habitat improvement projects may include water developments, riparian improvement projects, road closure projects, and other habitat improvement projects intended to restore sagebrush communities within burned areas.

## **Watershed Projects**

### Past

Between 1990 and 2005, a number of watershed improvement projects were successfully implemented to correct watershed problems including streambank stability, headcut rehabilitation, meadow and spring restoration, and other riparian restoration projects.

- During the mid 1990s, a large riparian pasture was created on the East Fork of the Quinn River on the Quinn River Allotment. Treatments were also completed to stabilize streambanks and encourage willow reproduction. This project has been a complete success and riparian conditions have improved significantly. Management changes were implemented and have resulted in significant improvements in riparian condition on approximately 6 miles along the East Fork of the Quinn River.

- In 2003, three large headcuts were reshaped, stabilized, and revegetated on the East Fork of the Quinn River on the Quinn River Allotment. Today these areas are fully stabilized, vegetated, and the sites are no longer barriers to fish migration.
- Also in 2003, the District reshaped, stabilized, and revegetated a large headcut on a spring and intermittent channel within the Abel Seeding on the Paradise Allotment. Today, the area is enclosed within a 5+-acre enclosure and is fully stabilized and vegetated.
- In 2004, the District implemented the Camus Watershed Project which reconstructed a deeply incised intermittent channel in the headwaters of Tom Basin on the Buttermilk Allotment. The area was seeded and an 100-acre enclosure installed to protect the site. During 2005, floodwaters damaged the treatments. The District repaired the channel and planted willows throughout the site. During the 2006 season, the site was fully vegetated and stabilized with new willows growing and live water flowing within the new channel. Site visits during 2008 confirmed that the site continues to improve, and riparian vegetation is well established on the site.
- Also in 2004, the District worked with the Nevada Department of Environmental Protection to reconstruct the Round Corral Riparian Enclosure. This enclosure was first constructed during the 1980s to protect approximately 20 acres of riparian meadows from impacts associated with livestock grazing. The enclosure is located at the head of Round Corral Creek within the Buttermilk Pasture of the Buttermilk Allotment.
- In 2005, the District reconstructed the Buttermilk Meadows Enclosure on the Buttermilk Allotment. This enclosure was constructed during the 1980s to protect a large meadow system that is spread over approximately 150 acres. Recovery on the meadows was limited prior to 2005 due to serious grazing non-compliance issues. Reconstruction of the enclosure has resulted in some improvement in conditions. In 2006, permit action was taken on the allotment and the largest permit was cancelled for serious and ongoing non-compliance issues. This action and other changes on the allotment have allowed both the Buttermilk and Lye Creek Pastures on the Buttermilk Allotment to receive 4 years of rest from livestock grazing.

### Present

In 2007, the District approved a project to extend the Quinn River riparian enclosure. The project will extend the existing Quinn River riparian pasture and protect an additional 1.5 miles of the East Fork of the Quinn River on the Quinn River Allotment. This project is expected to be implemented during the summer of 2009.

The District is also in the planning stages for the Cabin Creek Riparian Pasture Project, which was previously mentioned in the livestock developments section. This pasture will relocate existing fences and pasture boundaries to improve livestock management within portions of Cabin Creek, Martin Creek, Bradshaw Creek, Road Canyon Creek, and Dutch John Creek. The project will improve livestock management to meet riparian objectives on these streams and ensure upward trends in riparian conditions. This project will involve approximately 4,500 acres within the Martin Basin and Bradshaw Allotments. A decision is expected sometime during the winter of 2009 with implementation beginning in the late spring of 2009.

The District is also just beginning to plan the Bullion Springs Watershed Project. This project will involve the complete reconstruction and restoration of approximately 1.4 miles of Buttermilk Creek which is located within the Spring City Pasture of the Buttermilk Allotment. The stream has downcut as much as 20 feet and lacks riparian vegetation. This project will restore the stream

channel and re-establish riparian vegetation similar to the Camus Watershed Project described above.

The watershed projects identified above may have resulted in short term adverse effects upon riparian vegetative communities and water quality associated with sedimentation. These projects will result in improved condition of important vegetation communities and reduced the impacts from other activities such as livestock grazing. Improvement in the vegetative conditions will result in reduced potential for soil erosion, improved water quality associated with stable streambanks, and reduced sedimentation.

#### Foreseeable Future

In the future it is expected that at least one watershed improvement project will be completed each year on the Santa Rosa Ranger District. These projects are expected to focus on riparian area and stream restoration and stabilization and/or closure and rehabilitation of unauthorized roads.

### **Private Lands Management/Development**

#### Past and Present

Private land parcels are located throughout the cumulative effects area for this project. Very little development and management has occurred on most of these lands. The following is a summary of past and present management and development on private lands within the area:

- Historical mining activity and associated development has occurred on private lands near Spring City, Rebel Creek, and on the National Mining District. There are no active mines at any of these sites.
- There is a total of one home and five cabins located on private lands within the cumulative effects area.

There are no additional private land developments within the cumulative effects area.

In 2007, the Forest Service acquired approximately 9,800 acres of private inholdings under the Nevada First purchase through the Southern Nevada Public Lands Management Act (Map E-1). This purchase included 74 individual parcels ranging from 40 acres to 1,200 acres in size.

The Nevada First lands are undeveloped lands that contain important riparian and stream habitats, as well as areas of aspen, sagebrush, mountain mahogany, and other important vegetative communities. The Nevada First properties have been managed similar to surrounding National Forest System lands. All of the parcels that were purchased were previously grazed by livestock as part of the grazing management on the individual allotments on the District. These lands would continue to be grazed as part of these allotments.

In September of 2008, the Forest Service finalized the Rebel Creek purchase under the Southern Nevada Public Lands Management Act. This purchase involves approximately 4,158 acres of inholdings in one large parcel (Map E-1). These lands fall within portions of the Rebel Creek and Granite Peak Allotments. Approximately 340 acres are grazed as part of the Granite Peak Allotment while the remaining acres have been grazed as part of a private livestock operation.

The private land grazing has generally occurred from June through September each year. These lands will be grazed under a term grazing permit subject to the most current standards and guidelines.

Foreseeable Future

The risk of development on private lands within the cumulative effects area is currently low. There are no known plans to develop or change management on any of these lands, however, future development of some of these private parcels for recreational home sites is of concern and could occur in the future. The lands which are at greatest risk for future development occur along Indian Creek within the Granite Peak Allotment and lands near Hinkey Summit on the Buttermilk Allotment.

Map E-1. Nevada First and Rebel Creek Land Purchases.

