



Monitoring of Road Conditions and Signs

2008-2010

for

Clark County, Nevada and the Multiple Species Habitat Conservation Plan

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Agency Organization: National Park Service- Lake Mead National Recreation Area

Project Number: 2005-NPS-529-P

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Executive Summary

A wide variety of activities occur throughout the park, depending on the season of the year. During the late spring, summer and early fall the park sees more activities associated with the two lakes including: swimming, boating, kite boarding and more. During the winter time the park sees more activity in camping areas and along the extensive approved road system (4x4 roads). An important tool in keeping these various types of visitors informed about Park activities and rules are informational signs. Informational signs are the number one interpretative and informational tool the National Park Service has to offer. They are the first thing and the last thing a visitor will see in our National Parks. Information that is not clear and concise confuses the visitor.

In order to clearly communicate with visitors, the “Monitoring of Road Conditions and Signs Project” sought to use informational signs such as “ approved road arrow” and “stay on approved road” signs to minimize disturbance, and keep visitors informed of road conditions. In the past, visitors would drive off-road because the approved route was not clearly marked, to avoid a challenging section of the road or because they wanted to drive off-road. Regular monitoring of backcountry roads on the Nevada side of the Park would help the restoration program identify areas where disturbance was occurring due to unclear road designation, deliberate off-road travel, or impassable road conditions i.e. visitors going around wash outs. The proper information could then be relayed to road maintenance crews, law enforcement, and management staff for follow-up support. If proper road conditions are not maintained, and off-road travel is left unchecked, disturbances will continue to occur and most likely proliferate.

National Park Service and Bureau of Land Management staff worked together to develop and disseminate information to the public concerning appropriate backcountry recreation. Reports were also prepared for park law enforcement and management staff for input into the interagency recreation and Off-Highway Vehicle Conservation Initiatives and Annual Project review to the Adaptive Management Science Team.

The goal of this project is to minimize and mitigate the impacts caused by misuse of designated roads by clearly communicating road conditions and status to the public; providing logistical and data collection support for the park’s restoration and road maintenance programs; and provide vital and timely information to park law enforcement and management staff.

During the reporting period, National Park Service personnel have accomplished the following:

- National Park Service personnel submitted 125 work order request for signs throughout the Lake Mead National Recreation Area.

- Members of the NPS restoration crew installed 117 signs throughout the National Recreation Area.
- NPS restoration crew members have monitored every approved road on the Nevada side of Lake Mead National Recreation Area (excluding roads that were closed or when proper vehicles were not available to monitor).
- Road monitors informed NPS law enforcement of any illegal disturbance or problems with the signs after a road was monitored.

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Introduction

Description of the Project

This project was designed to provide logistical and data collection support for Lake Mead's National Recreation Area's restoration program, road maintenance program, wilderness management program, and provide information for law enforcement and staff management decisions. This support included a variety of tasks which aid in resource preservation and simultaneously help manage and maintain access to National Park Service lands. These tasks included: completing and maintaining an approved road and sign inventory; reporting difficult road conditions to park maintenance staff for correction; reporting new disturbance to park restoration program for treatment; reporting vandalism to infrastructure and other illegal activities to park law enforcement; installing, repairing and replacing signs and repairing fencing on designated roads and closed areas including wilderness, wilderness study areas, critical habitat and designated wilderness management areas and; developing and disseminating interpretive materials to enhance public understanding of off-road issues and acceptable recreation opportunities.

The National Park Service surveyed all legal Nevada roads at least quarterly to assess appropriate signage, condition of signs, and road maintenance needs. Whenever possible, the surveyor repaired the road, sign or fence immediately in order to reduce future impacts and increase efficiency. If immediate repairs were not possible, the surveyor reported the unacceptable condition to the appropriate park staff. The surveyor also documented off road travel disturbances, dumping, or other illegal activities encountered during these surveys. Areas of disturbance overlap between the National Park Service and the Bureau of Land Management were inventoried and monitored cooperatively (e.g., incursions and other resource damage on Bureau of Land Management-managed lands were reported to the agency). These reports included a quantitative description of activities and proposed upcoming activities.

Background and Need for the Project

Many legal roads at Lake Mead National Recreation Area were inadequately identified in the field because informational signs and road designations were in poor condition or missing altogether. Most of these situations are due to vandalism, but extreme environmental factors can cause rapid deterioration of signs as well. Lack of identified legal routes may force the law abiding public to choose an illegal route out of ignorance, perpetuating habitat damage. An obvious lack of maintenance may also encourage the less law abiding public to deliberately travel off-road, creating yet another track for others to follow. Related to this is the condition of the backcountry roads and fencing. The more challenging roads should be designated as 4x4 only, but many signs are missing. When difficult conditions are unexpectedly encountered, many drivers tend to

steer around the challenging areas, widening the road and creating habitat damage. This also applies to roads that are usually less difficult, but may have wash outs or ruts due to rainfall or unskilled drivers. Sometimes drivers damage wire fence or other barriers to gain access to a particular area, or to avoid a difficult stretch of road. Impacts associated with illegal off-road travel are identified in the MSHCP as significant threats, causing habitat fragmentation and degradation, direct mortality of covered species and expansion of weeds. This project helped mitigate these impacts by clearly communicating road condition and status to the public; providing logistical and data collection support for the park's restoration and road maintenance programs; and providing vital and timely information to park law enforcement and management staff.

Goals and Objectives of the Project

The goals for this project are as follows:

- Goal #1: Perform road, sign, fence, and barrier maintenance to help reduce illegal off-road travel in Lake Mead National Recreation Area due to public ignorance and deliberate deviation from approved routes.
- Goal #2: Provide information relating to road conditions, disturbance, and sign conditions to the appropriate National Park Service programs and management.
- Goal #3: Cooperate with the Bureau of Land Management (BLM) by performing standardized documentation and monitoring so that conditions may be compared on a landscape.

Management Actions and Threats Addressed

Conservation/Management NPS(2) - On a case-by-case basis, install signs at springs explaining the need for their protection and to reiterate state law that prohibits camping within 100 feet of water sources.

Ecosystem Threat 401 - habitat degradation and modification and indirect effects on species due to dispersed recreational activities (trampling of plants and soil by hunters, hikers, campers, mountain bikers, and equestrians); trail construction and maintenance

Ecosystem Threat 402 - habitat degradation and modification resulting from concentrated recreation (camping, ski area expansion, facilities development)

Ecosystem Threat 501: reduction of wildlife populations through highway mortality

Ecosystem Threat 504 - Highways, roads, and trails (road construction and maintenance)

Methods and Materials

Each road on the Nevada side of Lake Mead NRA was monitored at least once a quarter. Roads with known issues were monitored more frequently. Roads were also monitored more frequently if park staff reported condition, sign or barrier issues on a particular road.

For road monitoring and sign checks, the disturbance monitoring standard operating procedure was followed (Appendix 1). Roads were monitored by 4x4 Truck, UTV/ATV, or boat. Backcountry road monitoring vehicles were equipped with project and safety supplies as listed in Appendix 5. In brief, the data documentation procedure included the following:

- (1) Road, sign and/or barrier conditions were described on the monitoring assessment form. Any restoration that was completed was also described on the monitoring assessment form (Appendix 3).
- (2) Pictures were taken of the disturbance or breached barrier, and of any completed restoration.
- (3) Minor road, sign and barrier repair was performed and disturbances were restored.
- (4) Monitoring assessment form(s) were submitted to the restoration manager
- (5) If further restoration was needed, the restoration crew would follow up in the field to perform necessary restoration
- (6) If major road repair was necessary, the restoration manager would contact maintenance.
- (7) If a sign needed to be replaced or installed, a sign work order request form (Appendix 4.) was filled out and turned into the Lake Mead interagency sign shop. After the sign shop created the sign, the road monitor or a restoration crew member would return to the road to install the sign.
- (8) After sign installation, the sign location was spatially recorded using a Thames Talus Mobile Mapper Global Positioning System (GPS) unit. The GPS forms described in the monitoring of road conditions and signs ArcPad settings document (Appendix 2) were completed and saved on the GPS.
- (9) In the office, the signs GPS data was downloaded using active sync and stored in a 'to be merged' folder.

(10) Geographic information system (GIS) staff was notified by the restoration manager that data had been downloaded into the folder; the individual sign files were merged into the master signs database by GIS staff.

(11) Location maps for new disturbances were created by the restoration manager using ArcMap 9.2 following creating map layout in ArcMap standard operating procedure (Appendix 6).

(12) All disturbances, road, sign, and barrier conditions were reported via e-mail to the law enforcement and other appropriate staff.

Road monitoring and sign maintenance were performed by Lake Mead resource management staff. An Adopt-A-Road program was created to assist with monitoring all of the approved roads on the Nevada side of the park. Twenty eight roads were assigned to participants by park region. The Roads that were selected for the Adopt-A-Road Program are listed below in Table 1.

Table 1 Adopt-A-Road Names and Road Numbers

Road Name	Approved Road Number
Upper Bridge Canyon Rd	18
Rockefeller Mine Rd	32
Camp Dupont Mine Rd	32A
Opal Mountain Rd	33
Copper Mountain Rd	34
Solicitor Mine Rd	35
Indigo Rd	37
Canyon Point Rd	58
Canyon Point Mesa Rd	58A
Goldstrike Pass Rd	75
Goldstrike Canyon Rd	75A
Goldstrike Parallel Rd	75B
Black Canyon Overlook Rd	75C

North Boyscout Canyon Rd	75D
Box Canyon Rd	80
Crawdad Cove Rd	90
Boxcar Cove Rd	91
West End Wash Rd North	92
West End Wash Rd South	93
Anniversary Mine Rd	94A
Bitter Springs Rd	101
Old St. Thomas Rd	109
Old St. Thomas Rd A	109A
Old St. Thomas Rd B	109B
Devil's Cove Rd	115
Lakeside Bay Rd	121
Lakeside Mine Rd	121A
Catclaw Wash Rd	122

Adopt-A-Road participants submitted a monitoring assessment form and any supporting documentation such as pictures to the Adopt-A-Road folder for the restoration manager's review. The remaining fifty two backcountry approved roads were monitored by the restoration crew and are listed below in Table 2.

Table 2 Restoration Program Roads and Approved Road Numbers

Road Name	Approved Road Number
Nevada Telephone Cove Rd	9
Red Hill Rd	11

Red Hill Wash Rd	11A
Tri-State Rd	12
Lower Grapevine Canyon Rd	13
Stonehouse Rd	14
Christmas Tree Pass Rd	20
Pipe Springs Rd	20A
White Rock Canyon Rd	21
Empire Wash Rd	22
Nine Mile Cove Rd	23
Nellis Cove Rd	24
Sandy Wash Rd	25
Tamarisk Rd	27
Mid-basin Rd	28
Meade Davis Powerline Rd	30
Six Mile Cove Rd	31
Powerline Wash Rd	42
Loop Powerline Wash Rd	42A
West Powerline Wash Rd	42B
Dead End Powerline Rd	42C
Aztec Wash Rd	43
Fire Mountain Cove Rd	44
Fire Mountain Point Rd	44A
Montana Wash Rd	45
Eagle Wash Rd	46

Placer Cove Rd	47
Sand Wash Rd	48
Eldorado Wilderness Rd	49
Forlorn Hope Spring Rd	50
Yucca Camp Rd	51
Boyscout Canyon Rd	59
Burro Wash Rd	60
Calville Wash Rd North	94
Boathouse Cove Rd	97
Calville Wash Rd South	98
Echo Wash Rd	102
Fire Cove Rd	106
Sand Mine Rd	110
Muddy River Access Rd	111
Virgin River Access Rd	112
Virgin River West Rd	112A
Fisherman's Cove Rd	113
Narrows Road, North	114
Scanlon Ferry Rd	116
Scanlon Bay Rd	116A
Jumbo Pass Rd	117
West River Mountains Rd	154
Ridge Rd	154A
River Mountains South Powerline Rd	155

Red Mountain Rd	155A
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Data Management and QAQC

Both Lake Mead NRA's restoration program and GIS department performed data management for this project. The GIS department created the GPS data dictionaries and the signs and road monitoring access databases. The GIS staff also maintained the signs database.

The restoration crew managed the disturbance data, and kept the road monitoring database up-to-date. The restoration crew also assisted in the creation of GPS data dictionaries, and the signs and road monitoring databases.

A team consisting of all four federal agencies was created (National Park Service, Bureau of Land Management, Forest Service, and Fish and Wildlife Service) called Disturbance Assessment Restoration Treatment Team (DART). Every quarter the team met to discuss restoration techniques, and form a standardized documentation protocols for: Disturbance Assessment, Restoration Treatment, Daily Documentation, and Barrier Installation. This allowed the agencies to compile data in a common format and determine best restoration methods.

Table 3 Photographs of the Main Backcountry Road Sign Types in the Park

Road Sign Description	Picture of Approved Road Sign
Approved Road Arrow-4x4 Recommended	

<p>Authorized Vehicles Only</p>	
<p>Camping Symbol</p>	
<p>Entering Lake Mead NRA</p>	
<p>Hiking Symbol</p>	

<p>Hunting Area; No Target Shooting</p>	
<p>No Camping Symbol</p>	
<p>No Shooting Area Loaded Weapons Prohibited</p>	
<p>Road Name Example</p>	

<p>Travel Only on Approved Roads</p>	
<p>Vehicles Permitted Only on Approved Roads</p>	
<p>No Trash Cans Pack In Pack Out</p>	

Results and Evidence of the Results

The 2005-NPS-529 project field work occurred from April 1, 2008 to April 1, 2010. The sets of milestones and deliverables for the Clark County MSHCP project were the following:

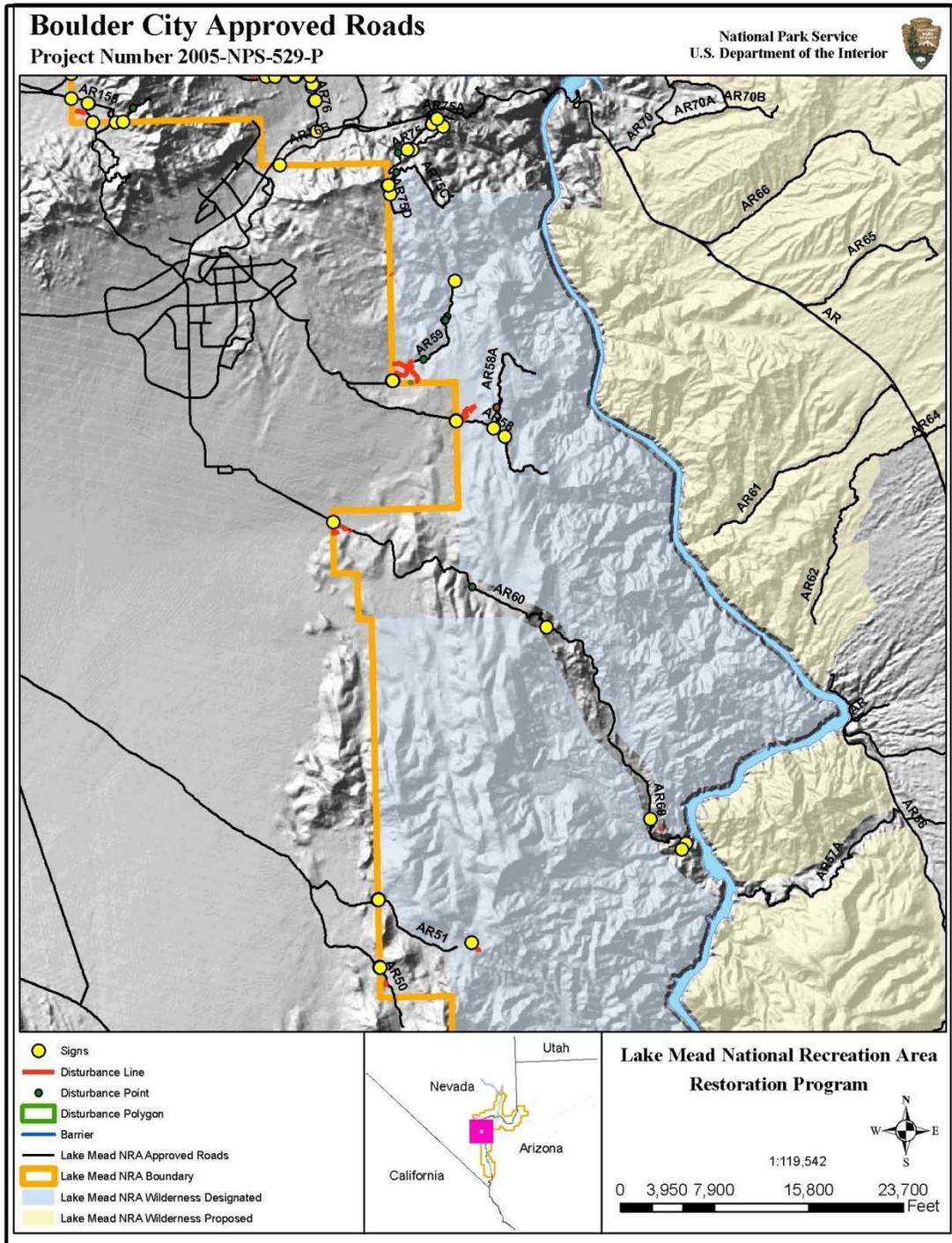
Objectives Completed

- M1 Contract Award and Mobilization – **02/19/2008**
- M2 Begin Monitoring Activities- **04/01/2008**
- M3 Complete Monitoring Activities- **03/31/2010**
- D1 Work Plan and Detailed Timeline – **03/20/2008**
- D2 Project Kickoff Meeting – **03/20/2008**
- D3 Data Management Plan – **03/20/2008**
- D4 Quarterly Progress Report- **04/01/2008**
- D5 Quarterly Progress Report- **07/01/2008**
- D6 Quarterly Progress Report- **10/01/2008**
- D7 Quarterly Progress Report- **01/01/2009**
- D8 Quarterly Progress Report- **04/01/2009**
- D9 Submit Annual Project Data – **05/01/2009**
- D10 Submit Biennium Project Summary Report-**06/30/2009**
- D11 Quarterly Progress Report- **07/01/2009**
- D12 Quarterly Progress Report- **10/01/2009**
- D13 Annual Project Review Presentation- **08/11/2009**
- D14 Quarterly Progress Report- **01/01/2010**
- D15 Quarterly Progress Report- **04/01/2010**

Backcountry Roads Discussion

Seventy roads were monitored in 10 regions of the Park: Boulder City, Calville Bay, Cottonwood Cove (Nelson Area), Cottonwood Cove, Katherine's Landing, Lakeshore, Government Wash, Echo Bay, Overton Beach, and Gold Butte. Below are maps of each region with the associated roads and disturbances. Below each region's map is a discussion of the region's backcountry roads. The disturbances depicted on the maps are new disturbances that occurred from February 2008-March 2010. The roads on the region maps are both backcountry and front country roads.

Figure 1. Map of Boulder City Region's Disturbances and Approved Roads



Boulder City Region Backcountry Roads

AR 50 (Forlorn Hope Spring Road) is a short road in the Boulder City area that follows a small wash leading to Forlorn Hope Springs on Boulder City land. Two disturbances were documented along this road. Both disturbances were associated with dirt bikes following a wash for a short while before connecting back to the approved road.

AR 050 - Forlorn Hope Spring Rd

<i>Post:</i> PTBC050-060426-093306	<i>Northing:</i> 3965686	<i>Easting:</i> 699201
<i>Sign:</i> S1 Hunting Area No Target Shooting	Replaced 6/16/2008 - old	
<i>Sign:</i> S2 AR arrow	Replaced 6/16/2008 - old	
<hr/>		
<i>Post:</i> PTBC050-060426-093622	<i>Northing:</i> 3965688	<i>Easting:</i> 699198
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 6/16/2008 - old	
<hr/>		
<i>Post:</i> PTBC050-080915-153121	<i>Northing:</i> 3965694	<i>Easting:</i> 699193
<i>Sign:</i> S1 Travel Only on AR	New installation 9/15/2008	

AR 51 (Yucca Camp Road) is a popular hunting road that is cherry-stemmed into the Black Canyon Wilderness area. This road received very little use, but disturbances were high at the end of the road. Five disturbances were documented at the end of the road associated with visitors traveling past the end of the road into the mountains. There was a barrier installed at the end of the road in 2005, which was extended in 2008 to prevent visitors from traveling beyond the end of the road. Although disturbances at the end of the road decreased since the barrier was installed and extended, there was still the potential for visitors to drive around the barrier due to the flatness of the terrain.



Beginning of AR 51, looking into the park

AR 051 - Yucca Camp Rd

<i>Post:</i> PTBC051-060424-140743	<i>Northing:</i> 3967416	<i>Easting:</i> 699151
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 6/16/2008 - old	
<i>Post:</i> PTBC051-060424-143540	<i>Northing:</i> 3966324	<i>Easting:</i> 701550
<i>Sign:</i> S1 Camping Symbol	Not replaced during this project	
<i>Post:</i> PTBC051-090715-122913	<i>Northing:</i> 3967421	<i>Easting:</i> 699158
<i>Sign:</i> S1 Travel Only on AR	New installation 9/15/2008	
<i>Post:</i> PTBC051-090715-123006	<i>Northing:</i> 3967416	<i>Easting:</i> 699159
<i>Sign:</i> S1 ROAD NAME	Replaced 6/16/2008 - old	
<i>Sign:</i> S2 Hunting Area No Target Shooting	Replaced 6/16/2008 - old	

AR 58 (Canyon Point Road) and AR 58A (Canyon Point Mesa Road) are located near the Boulder City solid waste facility. Both roads are fairly rough; an all-terrain vehicle (such as an ATV or UTV) is recommended. The first ¼ mile is relatively easy to drive and received the most use. Thirty eight disturbances were recorded at the beginning of AR58. These disturbances were an old network of user created tracks, which were not observed until a flyover in February 2009. Five disturbances were recorded on AR58A associated with a popular party site along the road. The party site had fire rings, trash and vehicle tracks.

AR 058 - Canyon Point Rd

<i>Post:</i> PTBC058-060424-095907	<i>Northing:</i> 3979657 <i>Easting:</i> 701157
<i>Sign:</i> S1 Travel Only on AR	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC058-060424-100609	<i>Northing:</i> 3979655 <i>Easting:</i> 701159
<i>Sign:</i> S1 ROAD NAME	Replaced 10/22/2008 - damaged
<hr/>	
<i>Post:</i> PTBC058-080423-132905	<i>Northing:</i> 3979250 <i>Easting:</i> 702390
<i>Sign:</i> S1 Camping Symbol/No Target Shooting	Replaced 4/23/2008 - damaged Replaced 10/22/2008 - damaged Replaced 3/16/2009 - missing/shot up

AR 058A - Canyon Point Mesa Rd

<i>Post:</i> PTBC058A-060424-102848	<i>Northing:</i> 3979459 <i>Easting:</i> 702107
<i>Sign:</i> S1 ROAD NAME	Replaced 11/17/2008

AR 59 (Boy Scout Canyon Road) is located in the Boulder City area and is a cherry stemmed road in the Black Canyon Wilderness area. The road mainly received traffic from the surrounding Boulder City area. A popular off-road vehicle course is located near the beginning of the approved road on Boulder City land. The road provides access to the popular Boy Scout Hot Springs hiking trail. Seven disturbances were recorded on AR59. Most disturbances were concentrated near the end of the road where the hiking trail begins, and the beginning of road where vehicle users would cut the LMNRA boundary fence to drive off-road into the park. A popular bouldering area was also tagged during this project.

AR 059 - Boyscout Canyon Rd

<i>Post:</i> PTBC059-060112-141654	<i>Northing:</i> 3980688 <i>Easting:</i> 699545
<i>Sign:</i> S1 EVERYTHING	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC059-060112-142903	<i>Northing:</i> 3983238 <i>Easting:</i> 701125
<i>Sign:</i> S1 End of Road	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC059-080514-082831	<i>Northing:</i> 3980678 <i>Easting:</i> 699511
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 5/14/2008 - damaged
<hr/>	
<i>Post:</i> PTBC059-090304-121234	<i>Northing:</i> 3980683 <i>Easting:</i> 699527
<i>Sign:</i> S1 ROAD NAME/Travel only on AR/4x4 recommended	Replaced 5/14/2008
<hr/>	
<i>Post:</i> PTBC059-090304-121858	<i>Northing:</i> 3980678 <i>Easting:</i> 699524
<i>Sign:</i> S1 Travel Only on AR/No Shooting/Street Legal	New installation 9/15/2008

AR 60 (Burro Wash Road) is a power line road that starts in the Boulder City area and ends at Lake Mohave. The approved road is bordered on the north by Black Canyon Wilderness area and on the south by the Eldorado Wilderness area. At the beginning of this project the entire road was not surveyed because of the roughness of the terrain. Once National Park Service employees were certified and approved to drive Utility Terrain Vehicles (UTVs) and ATVs the entire road was monitored. Six disturbances were recorded on AR 60. The majority of the disturbances on this road were at the beginning of the road around camping areas. Due to the ruggedness of this road, it is heavily used by ATVs, SUVs and dirt bikes. At the end of the road there was an illegal race track, which was closed and restored by the LMNRA restoration crew.

AR 060 - Burro Wash Rd

<i>Post:</i> PTBC060-060424-162154	<i>Northing:</i> 3977074 <i>Easting:</i> 698003
<i>Sign:</i> S1 Travel Only on AR	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC060-060426-084058	<i>Northing:</i> 3977072 <i>Easting:</i> 698004
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC060-060531-100921	<i>Northing:</i> 3968696 <i>Easting:</i> 706921
<i>Sign:</i> S1 Authorized Vehicles Only	Replaced 6/16/2008 - damaged
<hr/>	
<i>Post:</i> PTBC060-060626-121126	<i>Northing:</i> 3968854 <i>Easting:</i> 707032
<i>Sign:</i> S1 Authorized Vehicles Only	New installation 6/16/2008 Replaced 11/17/2008 - shot up Replaced 2/18/2009
<hr/>	
<i>Post:</i> PTBC060-080616-111829	<i>Northing:</i> 3969479 <i>Easting:</i> 706112
<i>Sign:</i> S1 AR arrow - 4X4	New installation 6/16/2008
<hr/>	
<i>Post:</i> PTBC060-090515-100801	<i>Northing:</i> 3974384 <i>Easting:</i> 703461
<i>Sign:</i> S1 AR arrow - 4X4	New installation 6/16/2008 Replaced 5/15/2009 - damaged
<hr/>	
<i>Post:</i> PTBC060-090515-100853	<i>Northing:</i> 3974375 <i>Easting:</i> 703459
<i>Sign:</i> S1 Authorized Vehicles Only	Replaced 6/16/2008 - missing Replaced 5/15/2009 - missing

AR 75 (Gold Strike Pass Road) is located in the Boulder City area. It is the primary access road linking ARs 75A, 75B, and 75C. This road is moderately rough and can easily be accessed using a 4X4 vehicle. Two graffiti disturbances were recorded on this road.

AR 075 - Goldstrike Pass Rd

<i>Post:</i> PTBC075-060426-123415	<i>Northing:</i> 3985670 <i>Easting:</i> 699411
<i>Sign:</i> S1 AR arrow	Replaced 7/28/2008 - missing/shot up
<hr/>	
<i>Post:</i> PTBC075-060426-135617	<i>Northing:</i> 3985677 <i>Easting:</i> 699409
<i>Sign:</i> S1 Welcome to Lake Mead NRA/Drive Only on AR	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC075-060426-140748	<i>Northing:</i> 3986586 <i>Easting:</i> 699912
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Sign:</i> S2 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC075-071103-083958	<i>Northing:</i> 3986583 <i>Easting:</i> 699900
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC075-080728-101118	<i>Northing:</i> 3985673 <i>Easting:</i> 699412
<i>Sign:</i> S1 ROAD NAME	Replaced 7/28/2008
<i>Sign:</i> S2 No Shooting Area Loaded Weapons Prohibited	Replaced 7/28/2008
<hr/>	
<i>Post:</i> PTBC075-090304-141017	<i>Northing:</i> 3987236 <i>Easting:</i> 700545
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC075-090304-142256	<i>Northing:</i> 3987175 <i>Easting:</i> 700811
<i>Sign:</i> S1 Authorized Vehicles Only	Not replaced during this project
<hr/>	
<i>Post:</i> PTBC075-090304-142857	<i>Northing:</i> 3986582 <i>Easting:</i> 700036
<i>Sign:</i> S1 Authorized Vehicles Only	Not replaced during this project

AR 75A (Gold Strike Canyon Road) is located in the Boulder City area. This road provides access to Gold Strike canyon. The end of the road usually had several parked cars (from hikers headed to the spring). During this project, no disturbance was documented on this road.

AR 075A - Goldstrike Canyon Rd

<i>Post:</i> PTBC075A-090406-135025	<i>Northing:</i> 3987375 <i>Easting:</i> 700661
<i>Sign:</i> S1 ROAD NAME	Replaced 4/6/2009

AR 75B (Gold Strike Parallel Road) is located in the Boulder City area near Gold Strike Canyon and meets up with AR75. This road is moderately rough and can easily be accessed using a 4X4 vehicle. Along portions of the road, the sides drop down into steep cliffs. During this project, no disturbance was documented on this road.



Beginning of the road at AR 75B

AR 075B - Goldstrike Parallel Rd

<i>Post:</i> PTBC075B-071103-080804	<i>Northing:</i> 3987247	<i>Easting:</i> 700533
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	

<i>Post:</i> PTBC075B-090304-140155	<i>Northing:</i> 3986595	<i>Easting:</i> 699917
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	

AR 75C (Black Canyon Overlook Road) is located in the Boulder City area off AR75. This road was relatively difficult to drive with a 4X4 truck, and was often monitored with a UTV. This road ends at a beautiful overlook of Black Canyon. Two disturbances were recorded on AR 75C. The disturbances were an old off-road disturbance, and an old car abandoned in a drainage/wash near the beginning of the road.

AR 075C - Black Canyon Overlook Rd

Post: PTBC075C-090406-140332

Northing: 3985669 *Easting:* 699428

Sign: S1 ROAD NAME

Replaced 7/28/2008 - damaged

Replaced 4/6/2009 - missing

Sign: S2 No Shooting Area Loaded Weapons Prohibited

Replaced 7/28/2008 - damaged

Replaced 4/6/2009 - missing

AR 75D (North Boy Scout Canyon Road) is located on a Boulder City road and forks off of a powerline road on Boulder City land. It is a short road ending abruptly at a wash. It is moderately rough and can easily be accessed using a 4X4 vehicle. Two disturbances were recorded at the end of AR 75D where dirt bikes follow a wash beyond the end of the road. A barrier was installed at the end of the road in February 2009 to keep visitors on the road.

AR 075D - North Boy Scout Canyon Rd

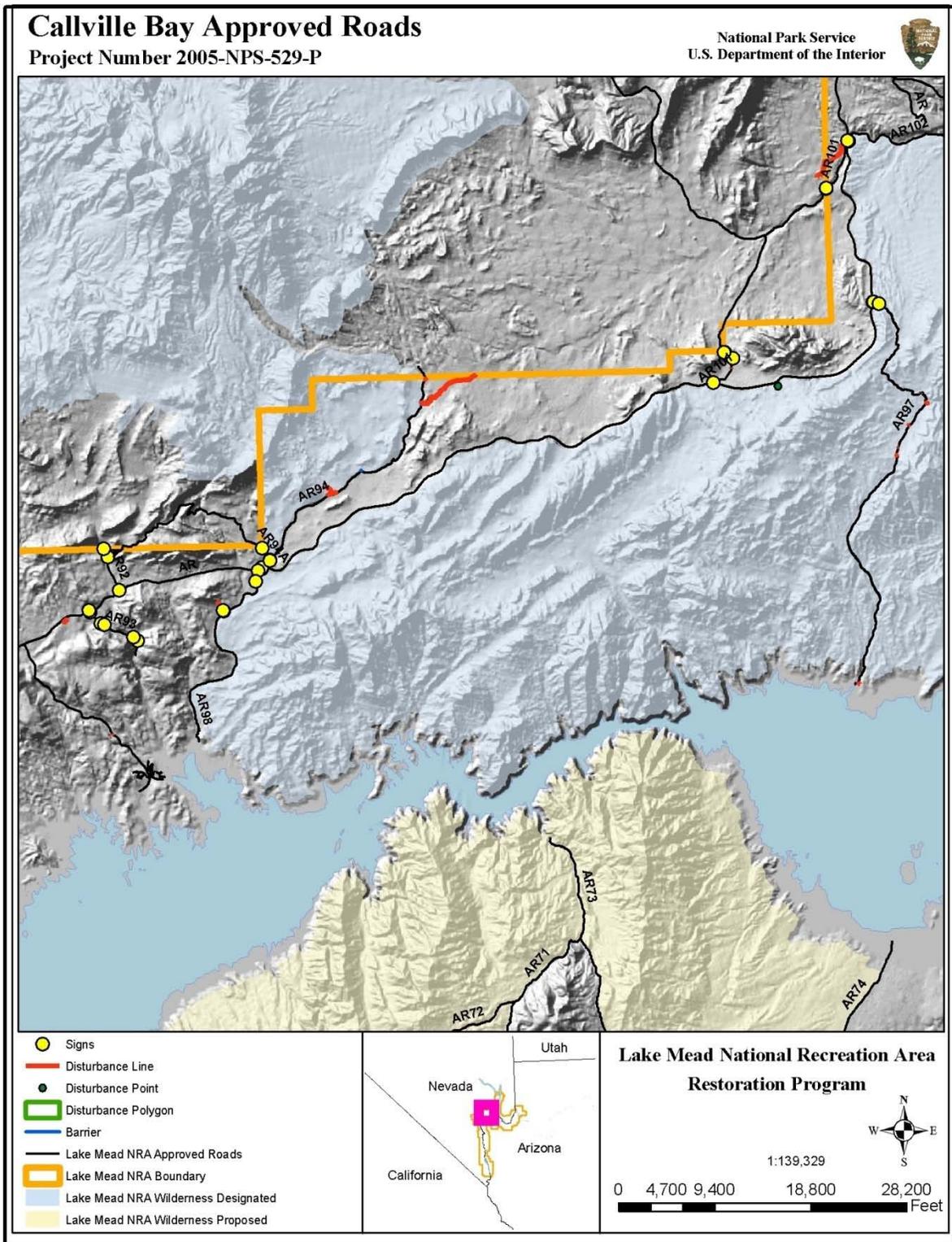
Post: PTBC075D-060426-122512

Northing: 3985443 *Easting:* 699464

Sign: S1 Hunting Area No Target Shooting

Not replaced during this project

Figure 2. Map of Callville Bay Region's Disturbances and Approved Roads



Calville Bay Region Backcountry Roads

AR 92 (West End Wash Road North) is located in the Calville Bay area and heads north off of Northshore road. This road is mainly in a wash. Two disturbances were recorded along this road from visitors following a wash to AR 93.

AR 092 - West End Wash Rd North

Post: PTCB092-060130-123847 Northing: 4007570 Easting: 703682

Sign: S1 ROAD NAME/4x4 Recommended/Stay on Approved Roads Not replaced during this project

Post: PTCB092-060130-124332 Northing: 4008819 Easting: 703225

Sign: S1 Welcome to Lake Mead NRA Not replaced during this project

Sign: S2 No Shooting Area Not replaced during this project

Sign: S3 AR arrow Not replaced during this project

AR 93 (West End Wash Road South) follows a wash along an old powerline road. This road ends at a barrier that prevents people from trying to access the rest of the powerline road. Ten disturbances were recorded on AR 93 which were concentrated in two areas. The first area was near the beginning of the road where visitors would turn around in a no motor vehicles area. The second disturbance area was in the wash described above where visitor travelled between AR92 and AR93.

AR 093 - West End Wash Rd South

Post: PTCB093-060226-090723 Northing: 4006073 Easting: 704236

Sign: S1 AR arrow - End Not replaced during this project

Post: PTCB093-060226-091432 Northing: 4006183 Easting: 704108

Sign: S1 AR arrow - 4X4 Replaced 5/28/2008

Post: PTCB093-060226-092253 Northing: 4006577 Easting: 703137

Sign: S1 AR arrow - 4X4 Not replaced during this project

Post: PTCB093-061102-122205 Northing: 4006915 Easting: 702820

Sign: S1 ROAD NAME Not replaced during this project

Post: PTCB093-080528-101028 Northing: 4006547 Easting: 703255

Sign: S1 AR arrow - 4X4 Not replaced during this project

AR 94 (Callville Wash North) is located off of Northshore Drive northeast of the Callville Bay Marina access road. This road is in a wash and heads north from Northshore road. The approved road is bordered on the northwest by Muddy Mountain Wilderness area. AR 94 begins on NPS land and heads north ending on BLM land. This road provides hiking access to the popular Bowl of Fire area and Anniversary Mine. Because the road is in a wash with 5-40 foot walls on both sides, disturbance was minimal. Three disturbances were recorded on this road where visitors drove into washes to connect with older disturbances.

AR 094 - Callville Wash North Rd

<i>Post:</i> PTCB094-060123-132336	<i>Northing:</i> 4008221 <i>Easting:</i> 707939
<i>Sign:</i> S1 AR arrow	Not replaced during this project
S2 AR arrow	Not replaced during this project
<i>Post:</i> PTCB094-060123-132519	<i>Northing:</i> 4008251 <i>Easting:</i> 707941
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTCB094-060123-150355	<i>Northing:</i> 4008464 <i>Easting:</i> 708184
<i>Sign:</i> S1 AR arrow	Not replaced during this project

AR 94A (Anniversary Mine Road) is located in the Calville Bay area. It is a two section road that arcs into BLM land with Anniversary mine located half-way down the road on BLM Land. The western section of the road is mainly in a soft sandy wash. The eastern section is very short and climbs out of a wash to where Anniversary mine is located. One disturbance was recorded on AR 94A where a visitor drove into a wash.

AR 094A - Anniversary Mine Rd

<i>Post:</i> PTCB094A-060123-150103	<i>Northing:</i> 4008477 <i>Easting:</i> 708182
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTCB094A-060123-152944	<i>Northing:</i> 4008828 <i>Easting:</i> 707951
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCB094A-080528-105555	<i>Northing:</i> 4008569 <i>Easting:</i> 703354
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 97 (Boathouse Cove Road) is located on Northshore road near Redstone. The approved road is bordered on the east by the Jimbilnan Wilderness area and on the west by the Pinto Valley Wilderness Area. AR 97 provides access to Lake Mead's Virgin basin, but due to the receding water level, access to the water has become more difficult. However the beach was still used for camping during this project. This road received more vehicle traffic and disturbances in the winter and spring. Seven disturbances were recorded on AR 97. Many of the disturbances on this road were from SUVs and trucks hill climbing near the end of the road.

AR 097 - Boathouse Cove Rd

<i>Post:</i> PTCB097-060815-130226	<i>Northing:</i> 4016169	<i>Easting:</i> 726171
<i>Sign:</i> S1 ROAD NAME/Camping 15 Day Limit/4X4 Recommended	Replaced 6/17/2008 - old	
<i>Post:</i> PTCB097-060815-130504	<i>Northing:</i> 4016170	<i>Easting:</i> 726173
<i>Sign:</i> S1 AR arrow	Not replaced during this project	
<i>Post:</i> PTCB097-060815-130741	<i>Northing:</i> 4016118	<i>Easting:</i> 726332
<i>Sign:</i> S1 Hunting Area No Target Shooting	Not replaced during this project	

AR 98 (Callville Wash South) is located off of Northshore road northeast of the Callville Bay Marina access road. The approved road is bordered on the east by the Pinto Valley Wilderness Area. The road follows a wash to a cove that is immediately adjacent to Callville Bay Marina. Because this road is located in a wash and the majority of the road has 5-40 foot walls, disturbances were minimal. Two disturbances were recorded on AR 98. One disturbance was a visitor traveling around an existing barrier and the second disturbance was a visitor driving off into the hills.

AR 098 - Callville Wash South Rd

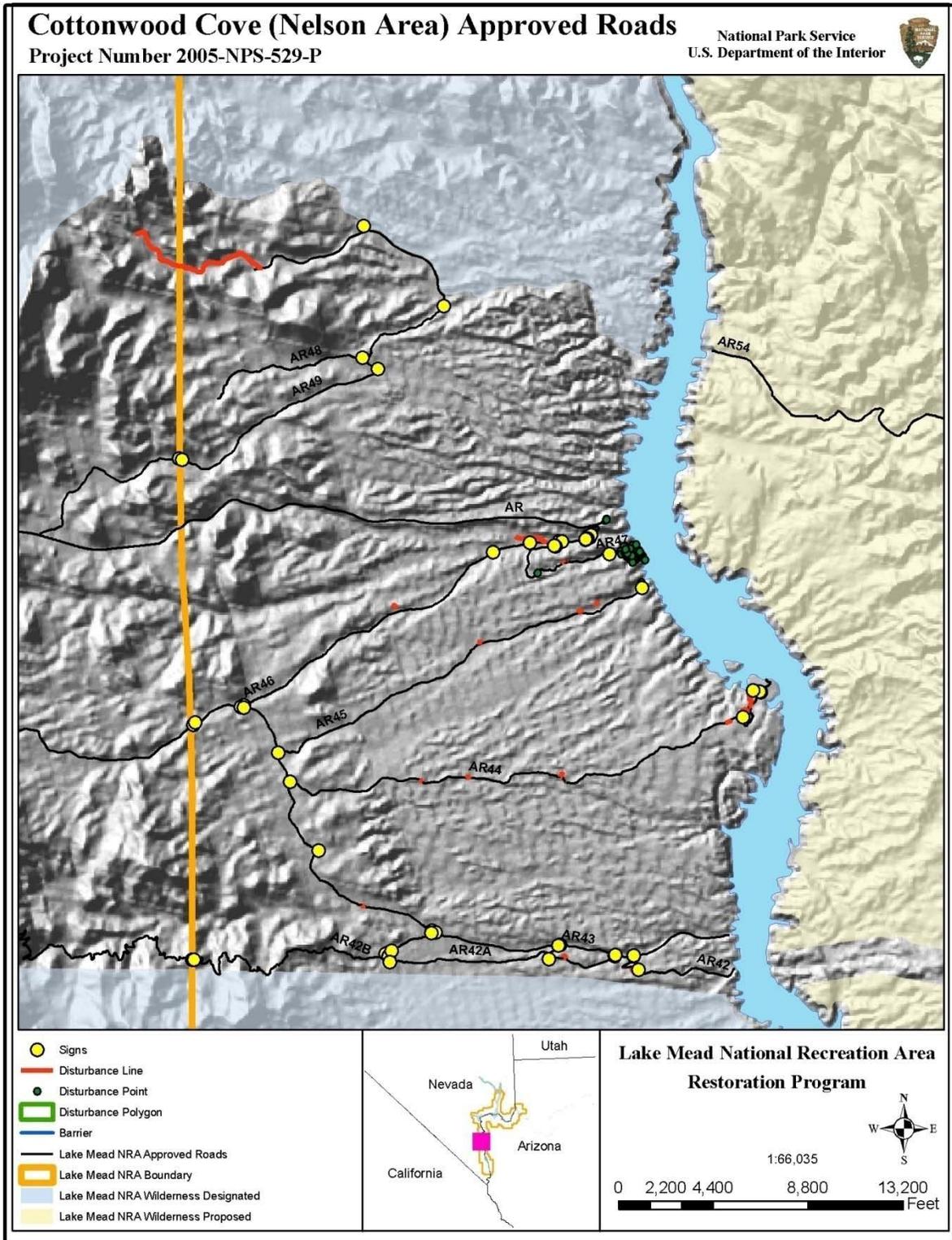
<i>Post:</i> PTCB098-061118-115740	<i>Northing:</i> 4008159	<i>Easting:</i> 707833
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	
<i>Post:</i> PTCB098-061118-120934	<i>Northing:</i> 4007851	<i>Easting:</i> 707765
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTCB098-061118-122547	<i>Northing:</i> 4006953	<i>Easting:</i> 706807
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTCB098-061118-122714	<i>Northing:</i> 4006973	<i>Easting:</i> 706787
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	

AR 101(Bitter Springs Road) is part of the BLM Bitter Springs backcountry by-way. The majority of the road is on BLM land, but it begins off Northshore road on the NPS, arcs through BLM land and reconnects with Northshore road further north by Echo Wash. Bitter Springs itself is located on the BLM section of the road. There is a small camping section on the western NPS section, but the majority of this road is in a wash. Only three disturbances were recorded; there was a hill climb disturbance near the entrance of the park on the eastern section. The entrance to AR 101 off Northshore Drive on the eastern section has been closed through most of this project due to the Northshore Drive Reconstruction Project.

AR 101 - Bitter Springs Rd

<i>Post:</i> PTCB101-060123-131001	<i>Northing:</i> 4013770 <i>Easting:</i> 721405
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 4X4 Recommended	Not replaced during this project
<i>Post:</i> PTCB101-080516-140251	<i>Northing:</i> 4014676 <i>Easting:</i> 721731
<i>Sign:</i> S1 AR arrow - 4X4	Replaced 5/16/2008
<i>Post:</i> PTCB101-080516-140638	<i>Northing:</i> 4014499 <i>Easting:</i> 721979
<i>Sign:</i> S1 Camping Symbol	Not replaced during this project
<i>Post:</i> PTCB101-080528-125338	<i>Northing:</i> 4014679 <i>Easting:</i> 721724
<i>Sign:</i> S1 You are Entering A Protected Area	Not replaced during this project
<i>Sign:</i> S2 Welcome to Lake Mead NRA/Travel Only on AR	Not replaced during this project
<i>Sign:</i> S3 Help Preserve America's Past	Not replaced during this project
<i>Post:</i> PTEB101-060123-122952	<i>Northing:</i> 4019564 <i>Easting:</i> 724773
<i>Sign:</i> S1 Off Road Travel Prohibited/Street Legal	Not replaced during this project
<i>Sign:</i> S2 Welcome to Lake Mead NRA/Drive Only on AR	Not replaced during this project
<i>Post:</i> PTEB101-081208-182350	<i>Northing:</i> 4019573 <i>Easting:</i> 724768
<i>Sign:</i> S1 ROAD NAME	New installation 12/8/2008

Figure 3. Map of Cottonwood Cove (Nelson Area) Region's Disturbances and Approved Roads



Cottonwood Cove Region Backcountry Roads

AR 42 (Powerline Wash Road, NV) is located in the Nelson area. The road is in a wash road that forks southeast off of AR 43. The road follows an active powerline to Lake Mohave. This is a popular swimming location. Five disturbances were recorded on AR 42. These disturbances ranged from vehicles pulling off the road to ATV users driving off into the desert. Visitors would also tag directional arrows along the road.

AR 042 - Powerline Wash Rd

<i>Post:</i> PTCC042-060131-151501	<i>Northing:</i> 3947765 <i>Easting:</i> 707545
<i>Sign:</i> S1 Authorized Vehicles Only	Replaced 5/29/2008 - missing 5/22/08
<i>Post:</i> PTCC042-060131-154458	<i>Northing:</i> 3947915 <i>Easting:</i> 706277
<i>Sign:</i> S1 AR arrow - End	Not replaced during this project
<i>Post:</i> PTCC042-060131-160346	<i>Northing:</i> 3948103 <i>Easting:</i> 706407
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC042-060131-161526	<i>Northing:</i> 3948282 <i>Easting:</i> 704613
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC042-060518-094656	<i>Northing:</i> 3947962 <i>Easting:</i> 707477
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC042-060810-113655	<i>Northing:</i> 3947953 <i>Easting:</i> 707479
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR42A (Loop Powerline Wash Road), AR 42B (West Powerline Wash Road), and AR 42C (Dead End Power Line Wash Road) are located in the southern section of the Nelson Area. They are all part of a powerline road and branch off of AR 43. During this project, disturbances were not recorded on AR42A or AR42B. Five disturbances were recorded on AR42C. Most of these disturbances were hill climbs. A barrier was installed at the end of 42C to prevent visitors from traveling beyond the end of the road.

AR 042A - Loop Powerline Wash Rd

Post: PTCC042A-060131-161209 *Northing:* 3947870 *Easting:* 704027

Sign: S1 AR arrow Not replaced during this project

Post: PTCC042A-060518-101556 *Northing:* 3947949 *Easting:* 704014

Sign: S1 AR arrow - 4X4 Not replaced during this project

Post: PTCC042A-060518-101733 *Northing:* 3948029 *Easting:* 704052

Sign: S1 AR arrow - 4X4 Not replaced during this project

AR 042B - West Powerline Wash Rd

Post: PTCC042B-060518-100508 *Northing:* 3947968 *Easting:* 707212

Sign: S1 AR arrow - 4X4 Not replaced during this project

Post: PTCC042B-060810-104118 *Northing:* 3948022 *Easting:* 704035

Sign: S1 AR arrow - 4X4 Not replaced during this project

Post: PTCC042B-060810-104341 *Northing:* 3947985 *Easting:* 703970

Sign: S1 ROAD NAME Not replaced during this project

Post: PTCC042B-060810-104515 *Northing:* 3947958 *Easting:* 704008

Sign: S1 AR arrow - 4X4 Not replaced during this project

Post: PTCC042B-070904-160847 *Northing:* 3947906 *Easting:* 701237

Sign: S1 Welcome to Lake Mead NRA Replaced 6/19/2008 - missing 5/29/08

Post: PTCC042B-080619-140604 *Northing:* 3947907 *Easting:* 701256

Sign: S1 ROAD NAME Replaced 6/19/2008 - missing 5/29/08

AR 042C - Dead End Powerline Wash Rd

Post: PTCC042C-060810-110116 *Northing:* 3947953 *Easting:* 707208

Sign: S1 ROAD NAME Not replaced during this project

AR 43 (Aztec Wash Road) is an alternate entrance into the park from the town of Nelson. The first half of the road travels in and out of washes, while the second half of the road follows a large wash to Lake Mohave. This road provides access to ARs 46, 45, 44, 42, 42A, 42B, and 42C. There are several private in-holdings including mine sites along this road. There is a nice beach at the end of the road which received heavy use in the summer. In the winter, visitors camped at the end of the road. Four disturbances were recorded on AR 43 which ranged from graffiti to visitors driving up washes.

AR 043 - Aztec Wash Rd

<i>Post:</i> PTCC043-060131-145914	<i>Northing:</i> 3948312 <i>Easting:</i> 704625
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC043-060131-150023	<i>Northing:</i> 3948289 <i>Easting:</i> 704673
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC043-060131-162129	<i>Northing:</i> 3949448 <i>Easting:</i> 703020
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Sign:</i> S2 Yellow Approved Road Sign	Not replaced during this project
<i>Post:</i> PTCC043-060518-101102	<i>Northing:</i> 3948113 <i>Easting:</i> 706432
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC043-060612-094555	<i>Northing:</i> 3951481 <i>Easting:</i> 701923
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC043-060612-094652	<i>Northing:</i> 3951467 <i>Easting:</i> 701965
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

AR 44 (Fire Mountain Cove Road) is located in the Nelson area. This road provides lake access and is popular with campers, fisherman and personal watercraft users. Eight disturbances were recorded on AR 44. This road received a high frequency of ORV disturbances at the end of the road until a barrier was built in 2005. Since the barrier was installed at the end of the road, most of the disturbances along this road were due to vehicles avoiding rough sections of the road. The barriers at the end of the road have been repaired several times in the last two years from visitors driving into them or from wash outs. Trash was often picked up at the end of the road in the summer. The road also has a history of stolen cars being dumped into Lake Mohave.

AR 044 - Fire Mountain Cove Rd

<i>Post:</i> PTCC044-060518-104844	<i>Northing:</i> 3951335 <i>Easting:</i> 709020
<i>Sign:</i> S1 Camping Symbol	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC044-060518-105504	<i>Northing:</i> 3951713 <i>Easting:</i> 709162
<i>Sign:</i> S1 Beach Access Via Foot Path	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC044-060612-115040	<i>Northing:</i> 3950422 <i>Easting:</i> 702617
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Sign:</i> S2 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC044-060911-130512	<i>Northing:</i> 3951698 <i>Easting:</i> 709256
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 44A (Fire Mountain Point Road) is a short spur road near the end of AR 44. Visitors typically park at the end of the road to access the many beaches in the area. Some barrier repair occurred along this section of the road due to visitors driving into the barrier and wash outs after rains, but no disturbances were recorded.

AR 044A - Fire Mountain Point Rd

<i>Post:</i> PTCC044A-060911-125608	<i>Northing:</i> 3951685 <i>Easting:</i> 709273
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

AR 45 (Montana Wash Road) is located in the Nelson area south of Placer cove. This popular road provides lake access, cliff jumping, camping, and other recreational opportunities. Camping and alcoholic beverages are prohibited at this cove due to its close proximity to Placer Cove. Three disturbances were recorded on this road, but trash is a major problem at the end. Even though this road is near Placer Cove, disturbances were low and were mainly graffiti tags near the cove.

AR 045 - Montana Wash Rd

<i>Post:</i> PTCC045-060627-084053	<i>Northing:</i> 3950833 <i>Easting:</i> 702451
<i>Sign:</i> S1 ROAD NAME/Travel only on AR/Camping Limit	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC045-071231-132725	<i>Northing:</i> 3953160 <i>Easting:</i> 707590
<i>Sign:</i> S1 No Camping Symbol	New installation 1/6/2010

AR 46 (Eagle Wash Road) is located in Eagle Wash in the Nelson area. This road connects AR43 to Eldorado Canyon road where a parking lot is located. This parking lot is a popular location for people to park and walk to the Lake Mohave and the surrounding cliffs. Thirteen disturbances were recorded on this road, mostly graffiti.

AR 046 - Eagle Wash Rd

<i>Post:</i> PTCC046-060131-083406	<i>Northing:</i> 3951222 <i>Easting:</i> 701252
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTCC046-060131-083539	<i>Northing:</i> 3951255 <i>Easting:</i> 701276
<i>Sign:</i> S1 ROAD NAME/Travel Only on AR	Not replaced during this project
<i>Post:</i> PTCC046-060518-113202	<i>Northing:</i> 3951499 <i>Easting:</i> 701968
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC046-060518-114208	<i>Northing:</i> 3953662 <i>Easting:</i> 705491
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC046-060518-114336	<i>Northing:</i> 3953800 <i>Easting:</i> 706003
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC046-060518-114459	<i>Northing:</i> 3953813 <i>Easting:</i> 706420
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC046-060518-140216	<i>Northing:</i> 3953908 <i>Easting:</i> 706873
<i>Sign:</i> S1 Extreme Flood Hazard	Replaced 7/22/2008 - damaged
<i>Post:</i> PTCC046-060612-094439	<i>Northing:</i> 3951498 <i>Easting:</i> 701963
<i>Sign:</i> S1 ROAD NAME	Replaced 3/3/2009 - damaged
<i>Post:</i> PTCC046-090303-092229	<i>Northing:</i> 3953858 <i>Easting:</i> 706820
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTCC046-090708-075707	<i>Northing:</i> 3953846 <i>Easting:</i> 706793
<i>Sign:</i> S1 Travel Only on AR	Not replaced during this project
<i>Post:</i> PTCC046-090708-075758	<i>Northing:</i> 3953847 <i>Easting:</i> 706793
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project

AR 47 (Placer Cove Road) is located in the Nelson area not far from Eldorado Wash. This extremely popular road provides lake access, cliff jumping, camping, and other recreational opportunities. During the summer this road was used by “beach partiers” while the rest of the year the road was used by fisherman and paddle sport enthusiasts. One hundred and sixty three disturbances were recorded on this road. The main type of disturbance was graffiti at Placer Cove. This road also received off-road vehicle disturbance and barrier breaches from both vehicle accidents and individuals purposefully removing the barriers. This road is a major problem area for the park, and in January 2010, the superintendent of Lake Mead NRA enacted new prohibitions on camping and drinking of alcoholic beverages within a one mile radius of Placer Cove.



The end AR 47 (Placer Cove) on a busy weekend

AR 047 - Placer Cove Rd

<i>Post:</i> PTCC047-060518-135726	<i>Northing:</i> 3953820	<i>Easting:</i> 706458
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTCC047-090303-082715	<i>Northing:</i> 3953756	<i>Easting:</i> 706359
<i>Sign:</i> S1 Vehicles Permitted Only on Approved Roads	Not replaced during this project	
<i>Post:</i> PTCC047-090708-081325	<i>Northing:</i> 3953754	<i>Easting:</i> 706366
<i>Sign:</i> S1 No Trash Cans	Replaced 7/8/2009 - missing	
<i>Post:</i> PTCC047-090827-082151	<i>Northing:</i> 3953643	<i>Easting:</i> 707130
<i>Sign:</i> S1 No Camping	New installation 8/27/2009	
<i>Post:</i> PTCC047-090827-083530	<i>Northing:</i> 3953754	<i>Easting:</i> 706348
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	
<i>Sign:</i> S2 No Camping	New installation 8/27/2009	

AR 48 (Sand Wash Road) is located near the historical Techatticup Mining Camp (in Nelson, NV); and is a spur off of AR49. This road is moderately rough and can easily be accessed using a 4X4 vehicle. Just before the end of this short road, travelers pass through a narrow section. During this project, no disturbance was documented on this road.

AR 048 - Sand Wash Rd

<i>Post:</i> PTCC048-060518-1	<i>Northing:</i> 3956420 <i>Easting:</i> 703643
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 49 (Eldorado Wilderness Road) is located near the historical Techatticup Mining Camp (in Nelson, NV). A small section of this road is bordered on the north by the Eldorado Wilderness area. This road is moderately rough and can easily be accessed using a 4X4 vehicle. A private mine claim is located at the end of this road. One disturbance was recorded on AR 49 and was related to private mine claim access.

AR 049 - Eldorado Wilderness Rd

<i>Post:</i> PTCC049-060131-133442	<i>Northing:</i> 3954992 <i>Easting:</i> 701051
<i>Sign:</i> S1 Travel Only on AR/Street Legal/No Shooting	Not replaced during this project

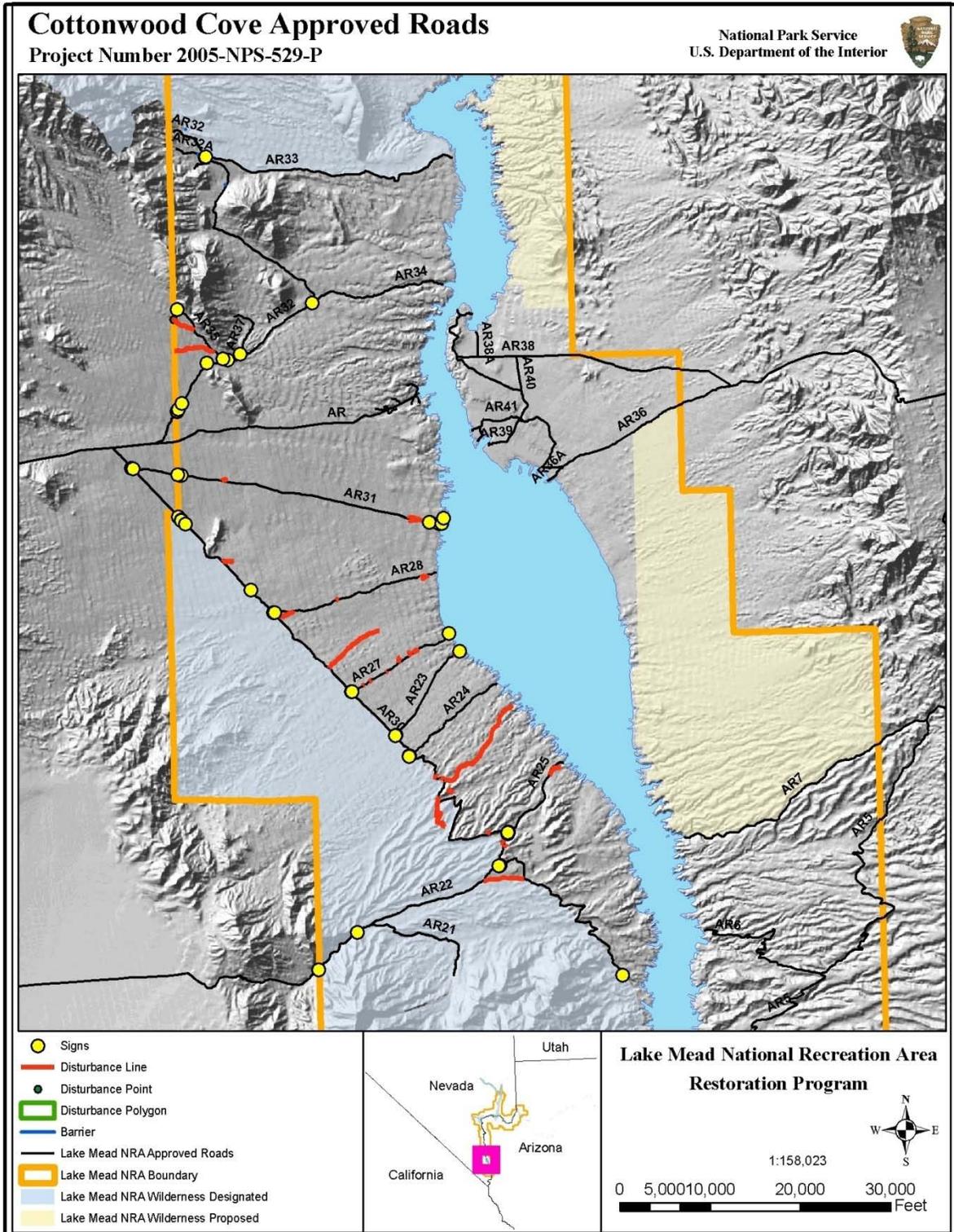
<i>Post:</i> PTCC049-060518-145637	<i>Northing:</i> 3956256 <i>Easting:</i> 703858
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

<i>Post:</i> PTCC049-060518-2	<i>Northing:</i> 3957149 <i>Easting:</i> 704790
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

<i>Post:</i> PTCC049-060518-3	<i>Northing:</i> 3958276 <i>Easting:</i> 703659
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

<i>Post:</i> PTCC049-080228-083554	<i>Northing:</i> 3954978 <i>Easting:</i> 701091
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

Figure 4. Map of Cottonwood Cove Region's Disturbances and Approved Roads



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05/26/2010

Cottonwood Cove Region Backcountry Roads

AR 21 (White Rock Canyon Road, NV) is located near Cal-Nev-Ari, NV in the southern section of the Cottonwood Cove area. The road is mainly used by ATV traffic because of the sharp turns and the roughness of the road. The beginning of the road follows the edge of a wash then heads over a hill into another wash toward an old mining camp. This is one of the more technical 4x4 roads in the Park. During this project, no disturbances were recorded on this road.

AR 021 - White Rock Mine Rd

Post: PTCC021-051031-114040

Northing: 3911897 *Easting:* 707796

Sign: S1 AR arrow - 4X4

Replaced 6/5/2008

Replaced 9/11/2008 - changed sign type

AR 22 (Empire Wash Road) is located near Cal-Nev-Ari, NV in the southern section of the Cottonwood Cove area. The road connects AR 30 to a BLM road that accesses the park from Cal-Nev-Ari, NV. Most of the road is in a wash and also passes a few older mining sites. This road was mainly used by quail hunters. One disturbance was recorded on this road where an ATV user was trying to access the old mine sites.

AR 022 - Empire Wash Rd

Post: PTCC022-051031-112348

Northing: 3910624 *Easting:* 706496

Sign: S1 ROAD NAME

Replaced 9/11/2008 - changed sign type

Post: PTCC022-051031-112455

Northing: 3910625 *Easting:* 706498

Sign: S1 Welcome to Lake Mead NRA

Not replaced during this project

Post: PTCC022-060613-132721

Northing: 3914141 *Easting:* 712581

Sign: S1 AR arrow

Not replaced during this project

AR 23 (Nine Mile Cove Road) is in the southern section of the Cottonwood Cove area where it begins off of AR 30 and follows a wash all the way down to Lake Mohave. A restroom is located at Nine Mile Cove making it a popular swimming and camping spot. This road was usually graded by the park maintenance crew. One disturbance was recorded on AR 23 where an SUV or truck performed hill climbs.



Picture looking east down AR 23

AR 023 - Nine Mile Coves Rd

<i>Post:</i> PTCC023-051107-134530	<i>Northing:</i> 3918533 <i>Easting:</i> 709083
<i>Sign:</i> S1 ROAD NAME/Off Road Travel Prohibited	Replaced 8/12/2008 - damaged
<i>Post:</i> PTCC023-051107-134652	<i>Northing:</i> 3918549 <i>Easting:</i> 709096
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC023-080611-144404	<i>Northing:</i> 3921386 <i>Easting:</i> 711246
<i>Sign:</i> S1 No Fireworks	Not replaced during this project

AR 24 (Nellis Cove Road) is located off of AR 30 and follows a wash all the way down to Lake Mohave. This is a popular road during the summer for swimming and camping and is graded by the park maintenance crew. Three disturbances were recorded on AR 24. The barrier at the end of the road was extended in the Spring of 2009 after a tamarisk removal project opened up gaps in the barrier that had been previously blocked by tamarisk. The barrier prevented visitors from travelling across sensitive desert habitat.

AR 024 - Nellis Cove Rd

<i>Post:</i> PTCC024-051107-142003	<i>Northing:</i> 3917844 <i>Easting:</i> 709554
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 Off Road Travel Prohibited	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC024-051107-142128	<i>Northing:</i> 3917856 <i>Easting:</i> 709570
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

AR 25 (Sandy Wash Road) is located off of AR 30 and follows a wash all the way down to Lake Mohave. This is a popular road during the summer for swimming and camping and is graded by the park maintenance crew. Two disturbances were recorded on AR 25 which occurred during the winter. These were a visitor driving up a wash, and a visitor performing a hill climb to access the water.

AR 025 - Sandy Wash Rd

<i>Post:</i> PTCC025-060613-133903	<i>Northing:</i> 3915278 <i>Easting:</i> 712897
<i>Sign:</i> S1 ROAD NAME/Off Road Travel Prohibited	Not replaced during this project
<hr/>	
<i>Post:</i> PTCC025-060613-133959	<i>Northing:</i> 3915262 <i>Easting:</i> 712885
<i>Sign:</i> S1 AR arrow	Not replaced during this project

AR 27 (Tamarisk Road) is located off of AR 30 and follows a wash all the way down to Lake Mohave. This is a popular road during the summer for swimming and camping and is graded by the park maintenance crew. Shoreline driving has been an issue in this area. Historically, dense tamarisk discouraged shoreline driving at the end of AR 27, but in March 2009 tamarisk was removed from the cove as part of a larger removal project which left the shoreline open to off-road travel. The restoration crew installed a barrier at the cove to prevent shoreline driving, and posted a sign designating the end of the road. Eight disturbances were recorded on AR 27. These disturbances were either visitors travelling in washes or creating loops off of the road. Visitors also pulled posts from the barrier at the end of the road.

AR 027 - Tamarisk Rd

Post: PTCC027-051107-133822

Northing: 3920015 *Easting:* 707602

Sign: S1 AR arrow - 4X4

Not replaced during this project

Post: PTCC027-051107-133912

Northing: 3920024 *Easting:* 707621

Sign: S1 Off Road Travel Prohibited

Not replaced during this project

Sign: S2 ROAD NAME

Not replaced during this project

Sign: S3 AR arrow - 4X4

Not replaced during this project

Post: PTCC027-090810-112714

Northing: 3921979 *Easting:* 710889

Sign: S1 End of Road

New installation 7/9/2009

AR 28 (Mid-Basin Road) is located off of AR 30 and follows a wash all the way down to Lake Mohave. This is a popular road during the summer for swimming, and during the winter for camping. The road is regularly graded by the park maintenance crew. Four disturbances were recorded on AR 28.

AR 028 - Mid-Basin Rd

Post: PTCC028-051107-125212

Northing: 3922691 *Easting:* 704961

Sign: S1 ROAD NAME/Travel only on AR

Not replaced during this project

Post: PTCC028-051107-125343

Northing: 3922694 *Easting:* 705005

Sign: S1 AR arrow

Not replaced during this project

AR 30 (Mead-Davis Powerline Road) is a powerline road that goes all the way from Cottonwood Cove road (Highway 164) and heads south ending five miles south of AR22 on the east side of the Spirit Mountains. Sections of the road have both Nellis Wash Wilderness Area and Spirit Mountain Wilderness Area on the western side of the road. A network of approved roads branch off it including: ARs 31, 28, 27, 23, 24, 25, and 22. Twelve disturbances were recorded on AR 30. Many of the disturbances along this road were from visitors following washes into the Nellis Wash Wilderness area. Additionally, 15 old powerline road-cuts were restored in the winter of 2010.

AR 030 - Mead-Davis Powerline Rd

<i>Post:</i> PTCC030-051107-122720	<i>Northing:</i> 3927573 <i>Easting:</i> 700181
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Sign:</i> S2 Off Road Travel Prohibited	Not replaced during this project
<i>Sign:</i> S3 ROAD NAME	Not replaced during this project
<i>Post:</i> PTCC030-051107-123237	<i>Northing:</i> 3925918 <i>Easting:</i> 701756
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTCC030-051107-123401	<i>Northing:</i> 3925825 <i>Easting:</i> 701849
<i>Sign:</i> S1 Vehicles Permitted Only on Approved Roads	Not replaced during this project
<i>Post:</i> PTCC030-051107-123512	<i>Northing:</i> 3925807 <i>Easting:</i> 701867
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC030-051107-123623	<i>Northing:</i> 3925669 <i>Easting:</i> 702008
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Post:</i> PTCC030-051107-124644	<i>Northing:</i> 3923446 <i>Easting:</i> 704198
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC030-051107-144433	<i>Northing:</i> 3917824 <i>Easting:</i> 709552
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTCC030-060613-132454	<i>Northing:</i> 3914151 <i>Easting:</i> 712624
<i>Sign:</i> S1 Road Closed	Not replaced during this project
<i>Post:</i> PTCC030-060613-132626	<i>Northing:</i> 3914142 <i>Easting:</i> 712598
<i>Sign:</i> S1 AR arrow	Replaced 6/5/2008 - missing 5/7/08
<i>Post:</i> PTCC030-060613-133617	<i>Northing:</i> 3915230 <i>Easting:</i> 712876
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC030-080611-125056	<i>Northing:</i> 3910444 <i>Easting:</i> 716752
<i>Sign:</i> S1 Road Closed	Not replaced during this project

AR 31 (Six Mile Cove Road) is located immediately south of Cottonwood Cove marina. Two permanent bathrooms and two large dumpsters are located at the end of the road. This road provides lake access and popular camping, fishing, boating, kite boarding, and wind surfing opportunities. Twenty two disturbances were recorded on AR 31. Disturbances typically occurred during the summer months when visitor use was higher.

Most of the disturbances occurred at the end of the road where visitors would illegally follow washes.

AR 031 - Six Mile Cove Rd

<i>Post:</i> PTCC031-051101-093541	<i>Northing:</i> 3925735 <i>Easting:</i> 710225
<i>Sign:</i> S1 Off Road Travel Prohibited	Not replaced during this project
<i>Sign:</i> S2 Vehicles Permitted Only on Approved Roads	Not replaced during this project
<i>Post:</i> PTCC031-051101-093752	<i>Northing:</i> 3925739 <i>Easting:</i> 710243
<i>Sign:</i> S1 Camping 15 Day Limit	Not replaced during this project
<i>Post:</i> PTCC031-051101-095448	<i>Northing:</i> 3925691 <i>Easting:</i> 710552
<i>Sign:</i> S1 Beach Access Via Foot Trail	Not replaced during this project
<i>Post:</i> PTCC031-051101-101721	<i>Northing:</i> 3927318 <i>Easting:</i> 701860
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC031-051101-101843	<i>Northing:</i> 3927327 <i>Easting:</i> 701806
<i>Sign:</i> S2 Off Road Travel Prohibited	Not replaced during this project
<i>Post:</i> PTCC031-051101-102620	<i>Northing:</i> 3927341 <i>Easting:</i> 701736
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTCC031-070723-134959	<i>Northing:</i> 3927549 <i>Easting:</i> 700235
<i>Sign:</i> S1 ROAD NAME/Camping Limit/Off Road Travel Prohibited	Not replaced during this project
<i>Post:</i> PTCC031-070723-143449	<i>Northing:</i> 3925706 <i>Easting:</i> 710645
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Sign:</i> S2 No Vehicles Beyond This Point	Not replaced during this project
<i>Post:</i> PTCC031-070723-143747	<i>Northing:</i> 3925885 <i>Easting:</i> 710716
<i>Sign:</i> S1 No Trash Cans	Replaced 9/11/2008 - missing 8/12/08
<i>Sign:</i> S2 No Vehicles Beyond This Point	Replaced 9/11/2008 - missing 8/12/08

AR 32 (Rockefeller Mine Road) is located in the northern Cottonwood Cove area and leads to a mining camp on BLM land. Five disturbances were recorded on AR 32. Most of these disturbances were visitors driving in washes or on old illegal roads.

AR 032 - Rockefeller Mine Rd

<i>Post:</i> PTCC032-051101-104409	<i>Northing:</i> 3929472 <i>Easting:</i> 701713
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTCC032-051101-104524	<i>Northing:</i> 3929484 <i>Easting:</i> 701720
<i>Sign:</i> S1 ROAD NAME	Replaced 9/9/2008 - changed sign type
<i>Post:</i> PTCC032-051101-104713	<i>Northing:</i> 3929542 <i>Easting:</i> 701752
<i>Sign:</i> S1 Travel Only on AR/Street legal vehicles/NoShooting	Not replaced during this project
<i>Post:</i> PTCC032-051101-105056	<i>Northing:</i> 3929745 <i>Easting:</i> 701873
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Post:</i> PTCC032-051101-105653	<i>Northing:</i> 3931114 <i>Easting:</i> 702726
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTCC032-080909-115924	<i>Northing:</i> 3938082 <i>Easting:</i> 702676
<i>Sign:</i> S1 AR arrow - 4X4	New installation 9/9/2008

AR 32A (Camp Dupont Mine Road) is a rocky road that is in good condition and located in the north cottonwood cove area. During this project, no disturbance was documented on this road.

AR 032A - Camp Dupont Mine Rd

<i>Post:</i> PTCC032A-080909-115839	<i>Northing:</i> 3938068 <i>Easting:</i> 702671
<i>Sign:</i> S1 ROAD NAME	New installation 9/9/2008

AR 33 (Opal Mountain Road) is located off of AR32 in the northern Cottonwood Cove area. The road follows a wash most of the way to Lake Mohave. During this project, no disturbance was documented on this road.

AR 033 - Opal Mountain Rd

<i>Post:</i> PTCC033-051101-124819	<i>Northing:</i> 3938075 <i>Easting:</i> 702683
<i>Sign:</i> S1 ROAD NAME	Replaced 9/9/2008 - changed sign type

AR 34 (Copper Mountain Road) is located off of AR32 in the north Cottonwood Cove area. This is a sandy road leading to Lake Mohave. One disturbance was recorded on this road and trash was removed from the end of the road.

AR 034 - Copper Mountain Cove Rd

Post: PTCC034-060503-100933

Northing: 3933141 *Easting:* 706270

Sign: S1 ROAD NAME

Replaced 9/9/2008 - changed sign type

AR 35 (Solicitor Mine Road) is located off of AR32 in the northern Cottonwood Cove area. It is a sandy road that heads west ending near the NPS boundary. There were five disturbances recorded on this road, mostly visitors entering the park from BLM land or visitors traveling in washes.

AR 035 - Solicitor Mine Rd

Post: PTCC035-051101-133035

Northing: 3931216 *Easting:* 703431

Sign: S1 ROAD NAME

Replaced 9/9/2008 - changed sign type

Post: PTCC035-051101-134319

Northing: 3932915 *Easting:* 701715

Sign: S1 Welcome to Lake Mead NRA

Replaced 6/25/2008

Post: PTCC035-051101-135255

Northing: 3931124 *Easting:* 702722

Sign: S1 AR arrow - 4X4

Not replaced during this project

Post: PTCC035-070501-122342

Northing: 3931263 *Easting:* 703267

Sign: S1 AR arrow - 4X4

Not replaced during this project

AR 37 (Indigo Road) is located off of AR32 in the northern Cottonwood Cove area. This road is a sandy road that heads west towards a mining area. During this project, no disturbance was documented on this road.

AR 037 - Indigo Mine Rd

Post: PTCC037-060503-093632

Northing: 3931408 *Easting:* 703843

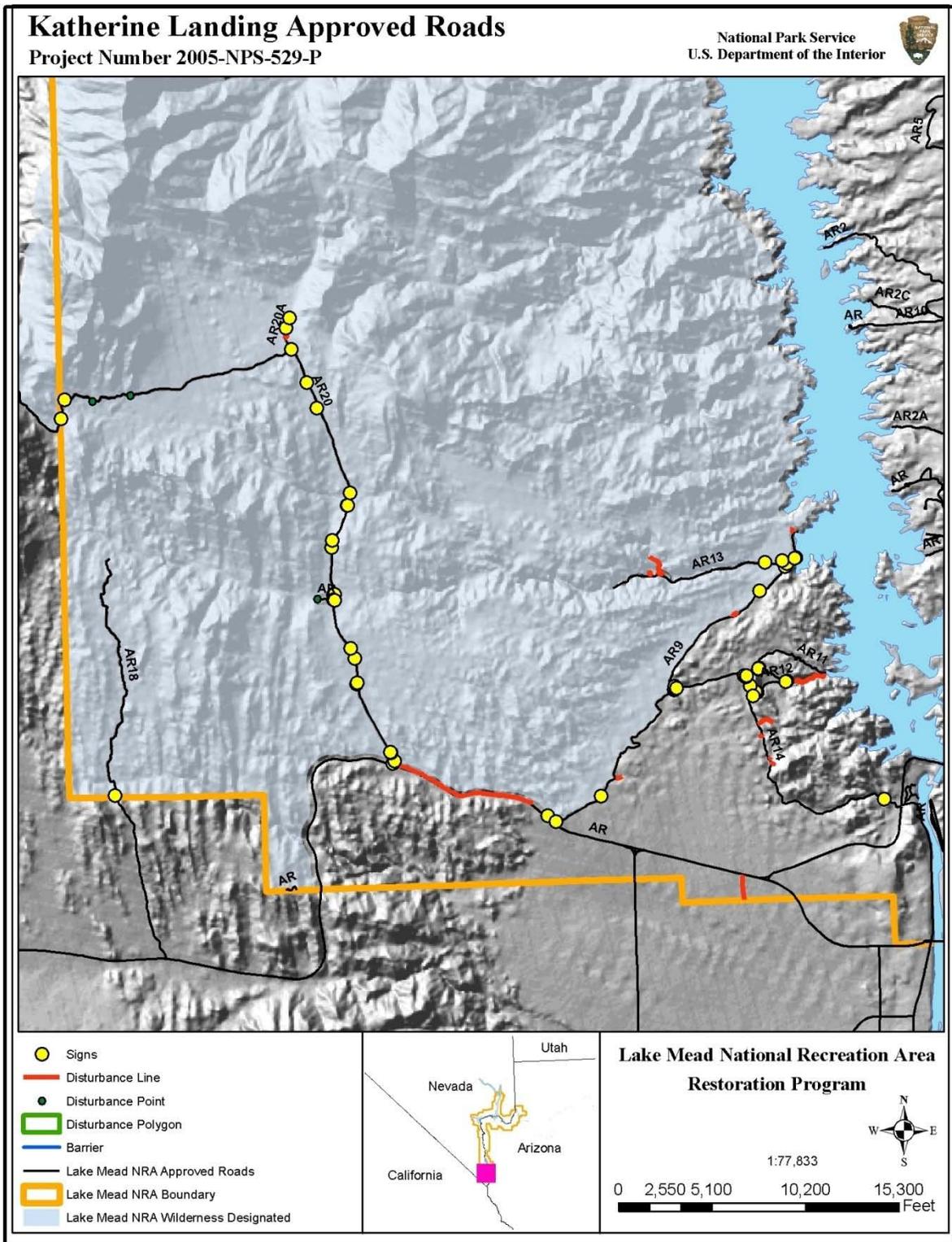
Sign: S1 ROAD NAME

Replaced 9/9/2008 - changed sign type



Flash flood along AR 31

Figure 5. Map of Katherine Region's Disturbances and Approved Roads



Katherine's Landing Region Backcountry Roads

AR 9 (Nevada Telephone Cove Road) is located in the southern section of the park near Laughlin, NV. This road goes in and out of washes, before it follows a wash down to Lake Mohave. At the end of the road is a large beach that during the summer receives large number of visitors from California, Arizona, and Nevada. Three disturbances were recorded on this road from ATVs. The major issue for this road was visitors removing wooden posts for firewood from the barrier that encircled the beach. This barrier was repeatedly repaired.



Picture of AR 09 during Memorial Day Weekend

AR 009 - Telephone Cove Rd

<i>Post:</i> PTKA009-060425-120044	<i>Northing:</i> 3896944 <i>Easting:</i> 714809
<i>Sign:</i> S1 Street Legal Vehicle Only	Not replaced during this project
<i>Post:</i> PTKA009-060425-123210	<i>Northing:</i> 3901241 <i>Easting:</i> 718936
<i>Sign:</i> S1 Camping 15 Day Limit	Not replaced during this project
<i>Sign:</i> S2 Litter Laws Strictly Enforce/No Trash Service on L	Not replaced during this project
<i>Post:</i> PTKA009-060428-142616	<i>Northing:</i> 3896839 <i>Easting:</i> 714943
<i>Sign:</i> S1 Vehicles Permitted Only on Approved Roads	Not replaced during this project
<i>Post:</i> PTKA009-060428-142820	<i>Northing:</i> 3897268 <i>Easting:</i> 715697
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Post:</i> PTKA009-060428-143435	<i>Northing:</i> 3899034 <i>Easting:</i> 716910
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA009-060428-143543	<i>Northing:</i> 3899057 <i>Easting:</i> 716916
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA009-060428-143944	<i>Northing:</i> 3900688 <i>Easting:</i> 718335
<i>Sign:</i> S1 No Hunting Area	Not replaced during this project
<i>Post:</i> PTKA009-060428-144123	<i>Northing:</i> 3901090 <i>Easting:</i> 718760
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Sign:</i> S2 AR arrow	Not replaced during this project
<i>Post:</i> PTKA009-060428-150302	<i>Northing:</i> 3901232 <i>Easting:</i> 718916
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project

AR 11 (Red Hill Road) is located near Laughlin, NV south of AR9. This road follows a large wash before making a hard left turn over a small hill where the road follows a tight wash to Keyhole Cove, a popular camping and swimming area in the summer. During this project, no disturbance was documented on this road due to the difficulty of terrain on both sides of the road.

AR 011 - Red Hill Rd

Post: PTKA011-060428-172551

Northing: 3899391 *Easting:* 718315

Sign: S1 AR arrow

Replaced 1/14/2010 - sign incorrect

Post: PTKA011-060906-142336

Northing: 3899397 *Easting:* 718325

Sign: S1 ROAD NAME

Replaced 1/14/2010 - sign incorrect

AR 11A (Red Hill Wash Road) this road is a short connector road between AR11 and AR12. Due to the shortness of this road, no disturbance was documented during this project.

AR 011A - Red Hill Wash Rd

Post: PTKA011A-060425-131501

Northing: 3899178 *Easting:* 718766

Sign: S1 ROAD NAME

Not replaced during this project

AR 12 (Tri-State Road) is located near Laughlin, NV south of AR11. This road is mainly in a wash starting at a bend in AR 14 and ends at the beginning of canyon at a choke point. Two disturbances were recorded from visitors traveling beyond the end of the road. Trespassers were typically dirt bikers or ATV users due to the narrowness of the passageway. A cable barrier was installed in January, 2009, but the cable has been torn down four times by visitors trying to reach the canyon beyond the end of the road.

AR 012 - Tri-State Rd

<i>Post:</i> PTKA012-051221-110529	<i>Northing:</i> 3899254 <i>Easting:</i> 718107
<i>Sign:</i> S1 AR arrow	Not replaced during this project
S2 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA012-060428-163241	<i>Northing:</i> 3899384 <i>Easting:</i> 718311
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA012-060428-173447	<i>Northing:</i> 3898939 <i>Easting:</i> 718226
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA012-060707-094333	<i>Northing:</i> 3899174 <i>Easting:</i> 718764
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA012-060906-135634	<i>Northing:</i> 3898994 <i>Easting:</i> 718297
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Sign:</i> S2 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA012-060906-141004	<i>Northing:</i> 3899182 <i>Easting:</i> 718789
<i>Sign:</i> S1 AR arrow - 4X4	Replaced 8/31/2009 - missing 6/30/09

AR 13 (Lower Grapevine Canyon Road) is located near Laughlin, NV and heads north from AR9 through the eastern section of Grapevine Canyon. This road is in a soft gravelly bottomed, steep walled canyon where the walls reach 100+ feet. There were sections of the road where washouts changed the road location. Two disturbances were recorded and were associated with a popular off-road vehicle route located approximately three-fourths of the way down the road, where visitors accessed a side canyon that heads north. At the beginning of the road a wooden post and cable barrier was installed, but posts from this barrier were typically knocked over or removed for firewood by people camping at nearby Nevada Telephone Cove.

AR 013 - Lower Grapevine Canyon Rd

<i>Post:</i> PTKA013-060425-124058	<i>Northing:</i> 3901162 <i>Easting:</i> 718421
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA013-060428-144320	<i>Northing:</i> 3901140 <i>Easting:</i> 718790
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA013-060428-144501	<i>Northing:</i> 3901191 <i>Easting:</i> 718708
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 14 (Stonehouse Road) is located near Laughlin, NV south of AR12. The northern section of the road follows a wash until the junction of AR 12. The southern section of the road transverses a few steep washes where an old stone cabin is located. Four disturbances were recorded on AR 14 from visitors driving in washes, performing hill climbs, and driving to historic sites.

AR 014 - Stonehouse Rd

<i>Post:</i> PTKA012-060425-130624	<i>Northing:</i> 3899275 <i>Easting:</i> 718077
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA012-060425-130740	<i>Northing:</i> 3899270 <i>Easting:</i> 718079
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA014-051221-111558	<i>Northing:</i> 3899270 <i>Easting:</i> 718119
<i>Sign:</i> S1 AR arrow - 4X4	Replaced 5/18/2009
<i>Post:</i> PTKA014-060425-132021	<i>Northing:</i> 3899003 <i>Easting:</i> 718261
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA014-060425-132137	<i>Northing:</i> 3899108 <i>Easting:</i> 718174
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA014-060425-152512	<i>Northing:</i> 3897213 <i>Easting:</i> 720410
<i>Sign:</i> S1 Entering Lake Mead	Not replaced during this project
<i>Sign:</i> S2 ROAD NAME	Not replaced during this project
<i>Sign:</i> S3 Vehicles Prohibited off Approved Roads	Not replaced during this project
<i>Post:</i> PTKA014-060428-162408	<i>Northing:</i> 3899091 <i>Easting:</i> 716917
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTKA014-060707-103602	<i>Northing:</i> 3899071 <i>Easting:</i> 716952
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 18 (Upper Bridge Canyon Road) is located near Laughlin, NV. This road heads north from Highway 163 and follows a few small washes and transverses others. There is a spring that runs through a section of the road during the wet months of the year. Disturbances along this road were associated with ATV users and dirt bikers following washes off of the approved road.

AR 018 - Upper Bridge Canyon Rd

<i>Post:</i> PTKA018-060327-153758	<i>Northing:</i> 3897281 <i>Easting:</i> 707599
<i>Sign:</i> S1 ROAD NAME/Off Road Travel Prohibited	Not replaced during this project
<i>Sign:</i> S2 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA018-060327-153922	<i>Northing:</i> 3897275 <i>Easting:</i> 707600
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project

AR 20 (Christmas Tree Pass Road) is located in the Grapevine Canyon Area. The road separates the Spirit Mountain Wilderness area from the Bridge Canyon Wilderness area. The road starts in the park on the eastern side of Christmas Tree Pass and then heads down on the southern side of Spirit Mountain curving around and connecting to Highway 163. This road provides access to a popular hiking trail in Grapevine Canyon. This road is a wide, well graded road that received heavy traffic throughout the project period. Four disturbances were recorded on AR 20. These disturbances ranged from graffiti tags to visitors driving through washes.

AR 020 - Christmas Tree Pass Rd

<i>Post:</i> PTKA020-051214-124051	<i>Northing:</i> 3897808 <i>Easting:</i> 712228
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-124348	<i>Northing:</i> 3897851 <i>Easting:</i> 712254
<i>Sign:</i> S1 EVERYTHING	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-125158	<i>Northing:</i> 3897990 <i>Easting:</i> 712190
<i>Sign:</i> S1 Vehicles Permitted Only on Approved Roads	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-125331	<i>Northing:</i> 3897996 <i>Easting:</i> 712186
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-125644	<i>Northing:</i> 3899137 <i>Easting:</i> 711619
<i>Sign:</i> S1 Hunting Area No Target Shooting	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-125809	<i>Northing:</i> 3899155 <i>Easting:</i> 711630
<i>Sign:</i> S1 No Hunting Area	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-130036	<i>Northing:</i> 3899557 <i>Easting:</i> 711597
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<hr/>	
<i>Post:</i> PTKA020-051214-130425	<i>Northing:</i> 3899726 <i>Easting:</i> 711521
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project

<i>Post:</i> PTKA020-051214-130812	<i>Northing:</i> 3900540 <i>Easting:</i> 711232
<i>Sign:</i> S1 Grapevine Canyon	Not replaced during this project
<i>Post:</i> PTKA020-051214-130947	<i>Northing:</i> 3900530 <i>Easting:</i> 711254
<i>Sign:</i> S1 Grapevine Canyon	Not replaced during this project
<i>Post:</i> PTKA020-051214-131217	<i>Northing:</i> 3901411 <i>Easting:</i> 711207
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<i>Post:</i> PTKA020-051214-131333	<i>Northing:</i> 3901525 <i>Easting:</i> 711217
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<i>Post:</i> PTKA020-051214-131519	<i>Northing:</i> 3902107 <i>Easting:</i> 711468
<i>Sign:</i> S1 No Hunting Area	Not replaced during this project
<i>Post:</i> PTKA020-051214-131608	<i>Northing:</i> 3902109 <i>Easting:</i> 711478
<i>Sign:</i> S1 No Shooting Area Loaded Weapons Prohibited	Not replaced during this project
<i>Post:</i> PTKA020-051214-131801	<i>Northing:</i> 3902320 <i>Easting:</i> 711517
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTKA020-051214-134722	<i>Northing:</i> 3903874 <i>Easting:</i> 706759
<i>Sign:</i> S1 EVERYTHING	Not replaced during this project
<i>Post:</i> PTKA020-051214-135023	<i>Northing:</i> 3903551 <i>Easting:</i> 706701
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTKA020-071104-103018	<i>Northing:</i> 3900619 <i>Easting:</i> 711239
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<i>Post:</i> PTKA020-071104-103334	<i>Northing:</i> 3900629 <i>Easting:</i> 711258
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<i>Post:</i> PTKA020-080304-154816	<i>Northing:</i> 3904158 <i>Easting:</i> 710787
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project
<i>Post:</i> PTKA020-080304-155314	<i>Northing:</i> 3903735 <i>Easting:</i> 710961
<i>Sign:</i> S1 No Vehicles Symbol	Replaced 4/30/2008 - missing 3/4/08

AR 20A (Pipe Springs Road) is located at the most northern section of AR 20 heading north. This road is a cherry-stemmed road in the Spirit Mountain Wilderness Area. The end of the road is a popular starting point for hiking Spirit Mountain. Five disturbances were recorded on 20A which were either dirt bikers driving off road or SUVs/trucks looping off the road.

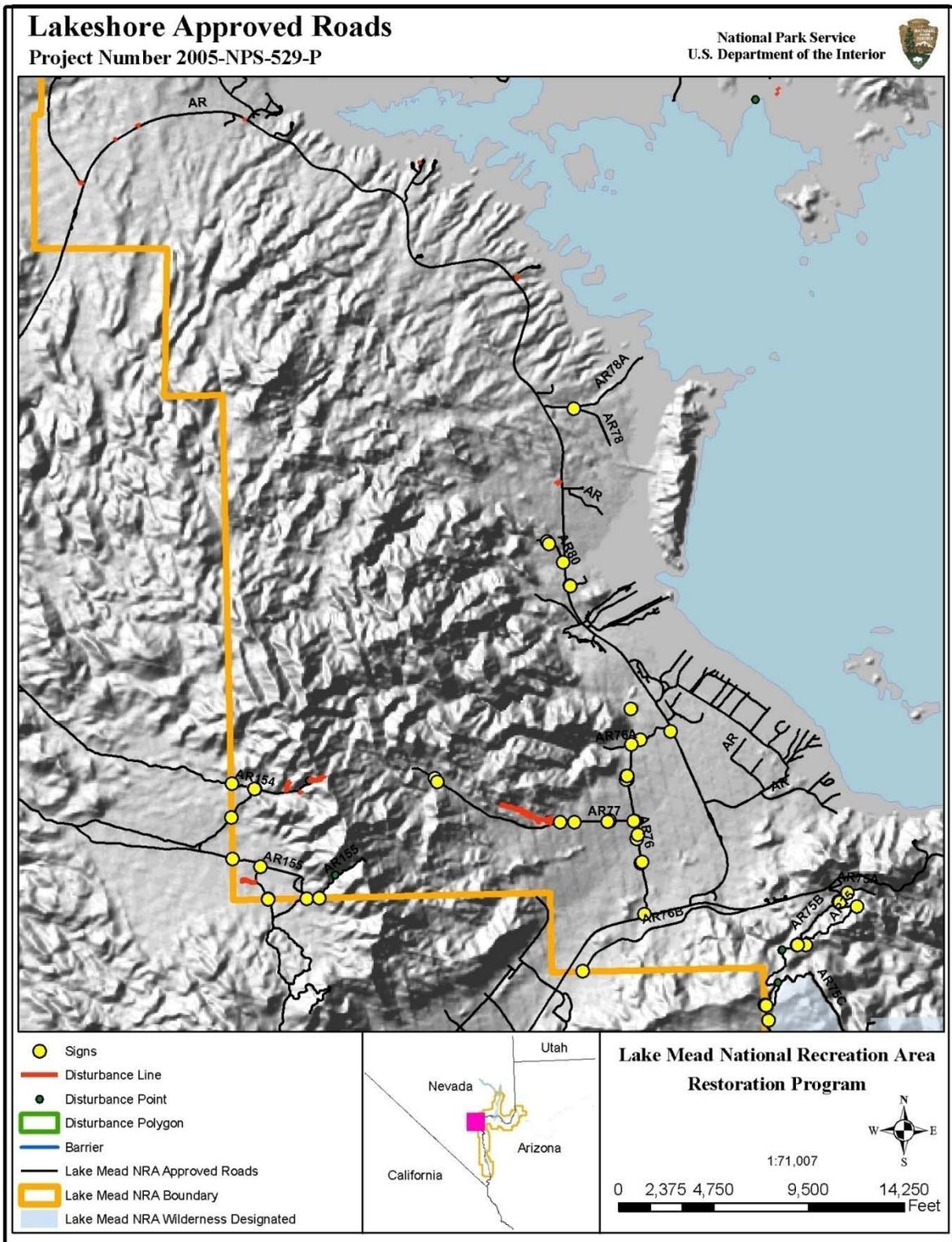
AR 020A - Pipe Spring Rd

<i>Post:</i> PTKA020A-051214-132334	<i>Northing:</i> 3904715	<i>Easting:</i> 710538
<i>Sign:</i> S1 ROAD NAME/Off Road Travel Prohibited	Not replaced during this project	
<i>Sign:</i> S2 Road Ends .5 miles	Not replaced during this project	
<i>Post:</i> PTKA020A-051214-132613	<i>Northing:</i> 3905235	<i>Easting:</i> 710501
<i>Sign:</i> S1 No Vehicles Beyond This Point	Not replaced during this project	
<i>Sign:</i> S2 End of Road	Not replaced during this project	
<i>Post:</i> PTKA020A-071104-105524	<i>Northing:</i> 3905064	<i>Easting:</i> 710442
<i>Sign:</i> S1 No Vehicles Symbol	Not replaced during this project	



Picture of the end of AR 20A

Figure 6. Map of Lakeshore Region's Disturbances and Approved Roads



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05/26/2010

Lakeshore Region Backcountry Roads

AR 80 (Box Canyon Road) is located off of Lakeshore drive, near the turnoff for the Southern Nevada Water Authority Treatment Plant. Three disturbances were recorded on AR80. These disturbances ranged from visitors driving in washes to visitors driving around an 'Authorized Vehicles Only' sign at the end of the road.

AR 080 - Box Canyon Rd

<i>Post:</i> PTLS080-060427-125244	<i>Northing:</i> 3992717 <i>Easting:</i> 696098
<i>Sign:</i> S1 Authorized Vehicles Only	Replaced 7/14/2009 - damaged
<i>Post:</i> PTLS080-090803-094658	<i>Northing:</i> 3992680 <i>Easting:</i> 696125
<i>Sign:</i> S1 AR arrow	Replaced 4/15/2008
<i>Post:</i> PTLS080-090803-094902	<i>Northing:</i> 3992400 <i>Easting:</i> 696347
<i>Sign:</i> S1 ROAD NAME	Replaced 4/15/2008 - damaged

AR 154 (West River Mountains) and AR 154A (Ridge Road) are located in a popular area east of Henderson, NV. In 2009, the Bureau of Land Management temporarily closed roads that accessed AR154 and AR154A. Currently the only legal access is from Boulder City land and travel up a medium-sized wash. AR154A begins on BLM land and ends at AR154 and had no disturbances recorded. AR154 ends at a choke point at the base of a smaller mountain and recorded thirteen disturbances in two locations. The first location was about half a mile from the end of the road where a barrier was installed to block an illegal road. The barrier was further extended in 2009 to prevent people from going around it. The second location was at the end of the road where a barrier was extended in 2008 and 2009 to prevent visitors from travelling illegally up the powerline road to an overlook of Boulder Basin. The barrier was occasionally removed by dirt bikers to access the illegal road.

AR 154 - West River Mountains Rd

<i>Post:</i> PTLS154-051219-134742	<i>Northing:</i> 3988953 <i>Easting:</i> 691669
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTLS154-051219-135837	<i>Northing:</i> 3989041 <i>Easting:</i> 691314
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTLS154-060427-102305	<i>Northing:</i> 3989042 <i>Easting:</i> 691310
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 154A - Ridge Rd

<i>Post:</i> PTLS154A-060312-140507	<i>Northing:</i> 3988527 <i>Easting:</i> 691307
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS154A-060427-101642	<i>Northing:</i> 3988526 <i>Easting:</i> 691307
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS154A-060427-101932	<i>Northing:</i> 3988952 <i>Easting:</i> 691653
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4X4	Not replaced during this project

AR 155 (River Mountains South Powerline Road) and AR 155A (Red Mountain Road) are located in a popular area near east of Henderson, NV. In 2009, the Bureau of Land Management temporarily closed roads that accessed AR155 and AR155A. Currently the only legal access is from Boulder City land. AR155A begins off of AR155 and heads south to the NPS boundary where it continues on Boulder City land. Three disturbances were recorded on AR 155A which were dirt bikers driving off-road. AR155 travels up a powerline road into the River Mountains and ends at an overlook of Boulder Beach and Boulder Basin. One graffiti disturbance was recorded on AR 155. An unrecorded dumpsite was also reported and cleaned up.

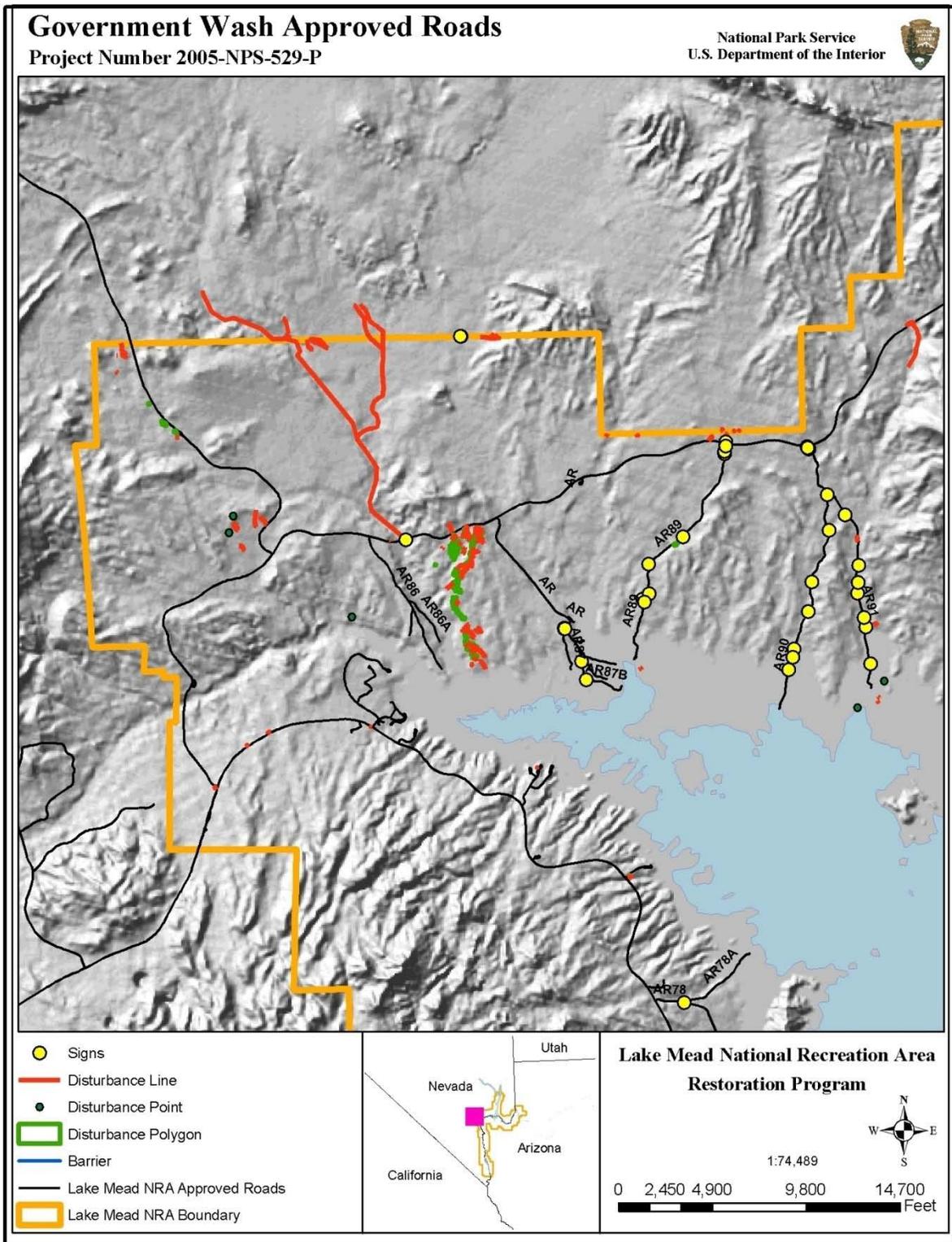
AR 155 - River Mountains South Powerline Rd

<i>Post:</i> PTLS155-060313-153528	<i>Northing:</i> 3987301 <i>Easting:</i> 692636
<i>Sign:</i> S1 AR arrow - 4X4	Replaced 2/23/2009
<hr/>	
<i>Post:</i> PTLS155-080324-114401	<i>Northing:</i> 3987897 <i>Easting:</i> 691320
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Sign:</i> S2 ROAD NAME	Not replaced during this project
<i>Sign:</i> S3 Vehicles Prohibited off Approved Roads	Not replaced during this project

AR 155A - Red Mountain Rd

<i>Post:</i> PTLS155A-051219-120813	<i>Northing:</i> 3987777 <i>Easting:</i> 691748
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS155A-051219-125458	<i>Northing:</i> 3987287 <i>Easting:</i> 691866
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS155A-051219-125621	<i>Northing:</i> 3987290 <i>Easting:</i> 691865
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS155A-060313-152445	<i>Northing:</i> 3987777 <i>Easting:</i> 691744
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTLS155A-060313-160045	<i>Northing:</i> 3987280 <i>Easting:</i> 691862
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

Figure 7. Map of Government Wash Region's Disturbances and Approved Roads



Government Wash Region Backcountry Roads

AR 90 (Crawdad Cove Road) is located in the Government Wash area. During the winter, it is a popular area for camping. During the summer before the water in Lake Mead receded, this was a popular swimming location. Nine disturbances were recorded on this road. Most of the disturbances were below the high water mark where a network of user created roads had been established. In the winter of 2009, tank traps were installed along the road to designate a single approved route among the network of roads created by visitors as the water level receded over several years. Maintenance was recruited to fix tank trap breaches during the fall of 2009, and winter of 2010. Most of the tank trap breaches occurred where the tank traps cut off direct access to the old

AR 090 - Crawdad Cove Rd

<i>Post:</i> PTGW090-091029-1	<i>Northing:</i> 4001436	<i>Easting:</i> 698541
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009	
<i>Post:</i> PTGW090-091029-141630	<i>Northing:</i> 4002827	<i>Easting:</i> 698785
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	
<i>Sign:</i> S2 Travel Only on AR	New installation 10/29/2009	
<i>Post:</i> PTGW090-091029-143126	<i>Northing:</i> 4000371	<i>Easting:</i> 698263
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTGW090-091029-143627	<i>Northing:</i> 4000965	<i>Easting:</i> 698487
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTGW090-091029-144314	<i>Northing:</i> 4002261	<i>Easting:</i> 698818
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	
<i>Post:</i> PTGW090-091104-1	<i>Northing:</i> 4000235	<i>Easting:</i> 698237
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009	
<i>Sign:</i> S2 AR arrow	New installation 11/4/2009	
<i>Post:</i> PTGW090-091104-2	<i>Northing:</i> 4000044	<i>Easting:</i> 698175
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009	
<i>Sign:</i> S2 AR arrow	New installation 11/4/2009	

network of user created roads.

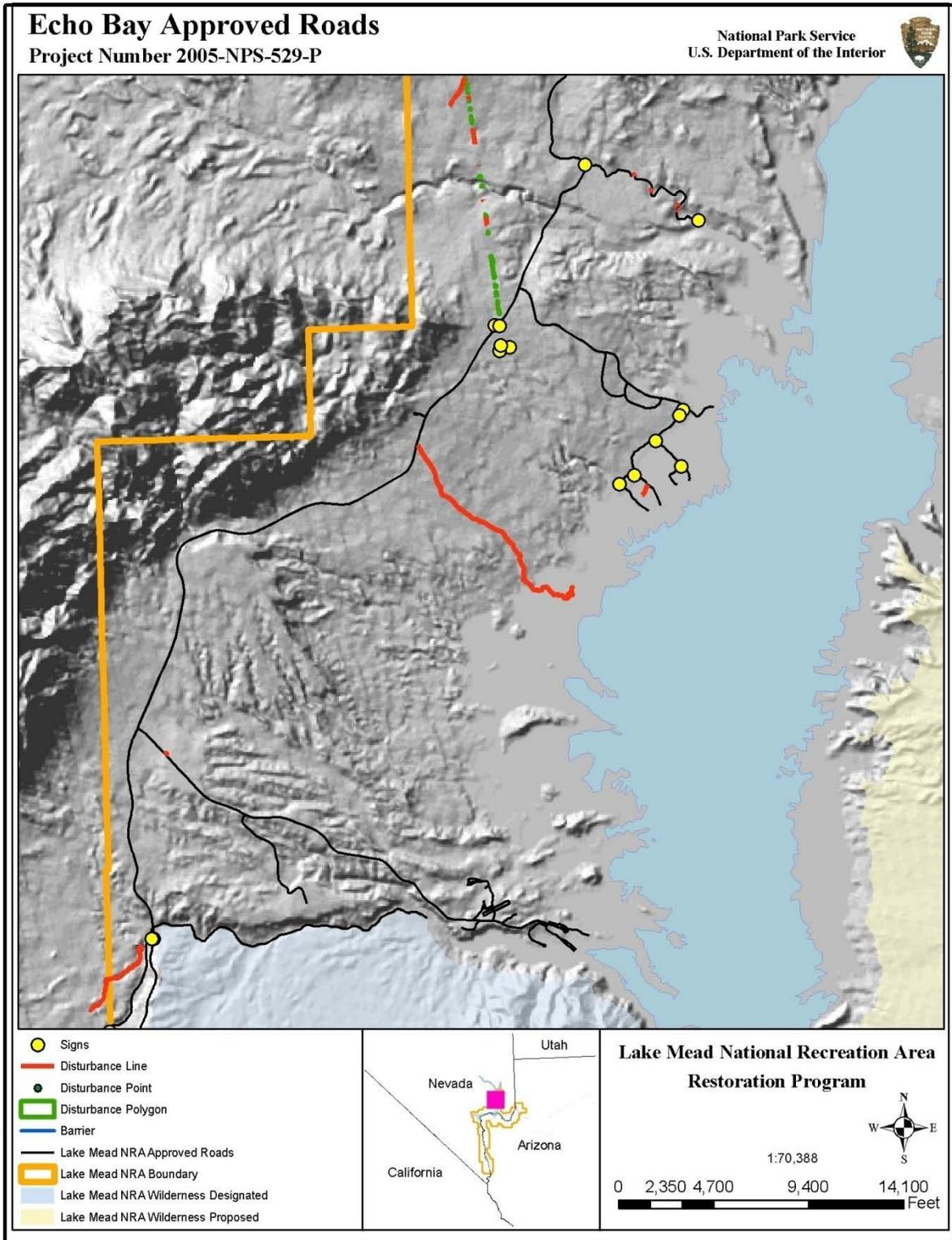
AR 91 (Boxcar Cove Road) is located in the Government Wash area. During the winter, it is a popular area for camping since there is a restroom located near the end of the road. During the summer before the water in Lake Mead receded, this was a popular swimming and boating location. Fifteen disturbances were recorded on AR 91. In the

winter of 2009, tank traps were installed along the road to designate a single approved route among the network of roads created by visitors as the water level receded over several years. Maintenance was recruited to fix tank trap breaches during the fall of 2009, and winter of 2010. Maintenance also extended the tank traps at the end of the road as the water level receded and visitors were going around the tank traps. Most of the tank trap breaches occurred where they cut off direct access to the old network of user created roads. There were a few disturbances associated with the tank trap breaches; the other disturbances were mainly off of the user created road network below the high water mark.

AR 091 - Boxcar Cove Rd

<i>Post:</i> PTGW091-051103-084306	<i>Northing:</i> 4002509 <i>Easting:</i> 699075
<i>Sign:</i> S1 Off Road Travel Prohibited	New installation 10/29/2009
<i>Post:</i> PTGW091-051103-084729	<i>Northing:</i> 4002832 <i>Easting:</i> 698785
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
S2 ROAD NAME	Not replaced during this project
<i>Post:</i> PTGW091-051103-091846	<i>Northing:</i> 4003560 <i>Easting:</i> 698493
<i>Sign:</i> S1 Litter Laws Strictly Enforce/No Trash Service on L	Not replaced during this project
<i>Post:</i> PTGW091-051103-092217	<i>Northing:</i> 4003599 <i>Easting:</i> 698468
<i>Sign:</i> S1 ROAD NAME/Camping 15 Day Limit/Stay on AR	Not replaced during this project
<i>Post:</i> PTGW091-091029-140444	<i>Northing:</i> 4003574 <i>Easting:</i> 698478
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Sign:</i> S2 Travel Only on AR	New installation 10/29/2009
<i>Post:</i> PTGW091-091104-1	<i>Northing:</i> 4001705 <i>Easting:</i> 699292
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009
S2 AR arrow	New installation 11/4/2009
<i>Post:</i> PTGW091-091104-2	<i>Northing:</i> 4001256 <i>Easting:</i> 699274
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009
	Replaced 1/22/2010 - missing
<i>Post:</i> PTGW091-091104-3	<i>Northing:</i> 4000874 <i>Easting:</i> 699378
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009
S2 AR arrow	New installation 11/4/2009
<i>Post:</i> PTGW091-091104-4	<i>Northing:</i> 4000718 <i>Easting:</i> 699407
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009
S2 AR arrow	New installation 11/4/2009
<i>Post:</i> PTGW091-091104-5	<i>Northing:</i> 4000131 <i>Easting:</i> 699479
<i>Sign:</i> S1 AR arrow	New installation 11/4/2009
S2 AR arrow	New installation 11/4/2009
<i>Post:</i> PTGW091-091204-1	<i>Northing:</i> 4001432 <i>Easting:</i> 699282
<i>Sign:</i> S1 AR right arrow	New installation 12/4/2009

Figure 8. Map of Echo Bay Region's Disturbances and Approved Roads



Echo Bay Region Backcountry Roads

AR 102 (Echo Wash Road) is located off of Northshore road in the Echo Bay region. The entire road follows a wash to the Echo Bay Marina. During this project, no disturbance was recorded on this road. This road was closed from October 2008 through the end of the project due to the Northshore Reconstruction Project.

AR 102 - Echo Wash Rd

Post: PTEB102-060123-122045 *Northing:* 4020975 *Easting:* 725431

Sign: S1 AR arrow Not replaced during this project

Sign: S2 Approved Road Not replaced during this project

Post: PTEB102-060123-122225 *Northing:* 4020982 *Easting:* 725407

Sign: S1 Echo Wash Not replaced during this project

Sign: S2 4X4 Recommended Not replaced during this project

AR 106 (Fire Cove Road) is located off of Northshore road in the Echo Bay Region. This road follows a wash over some volcanic rock areas. Prior to the lake level dropping, this road provided access to Lake Mead. This road was closed from October 2008-March 2010 due to the Northshore Reconstruction Project. Four disturbances were recorded on AR 106.

AR 106 - Fire Cove Rd

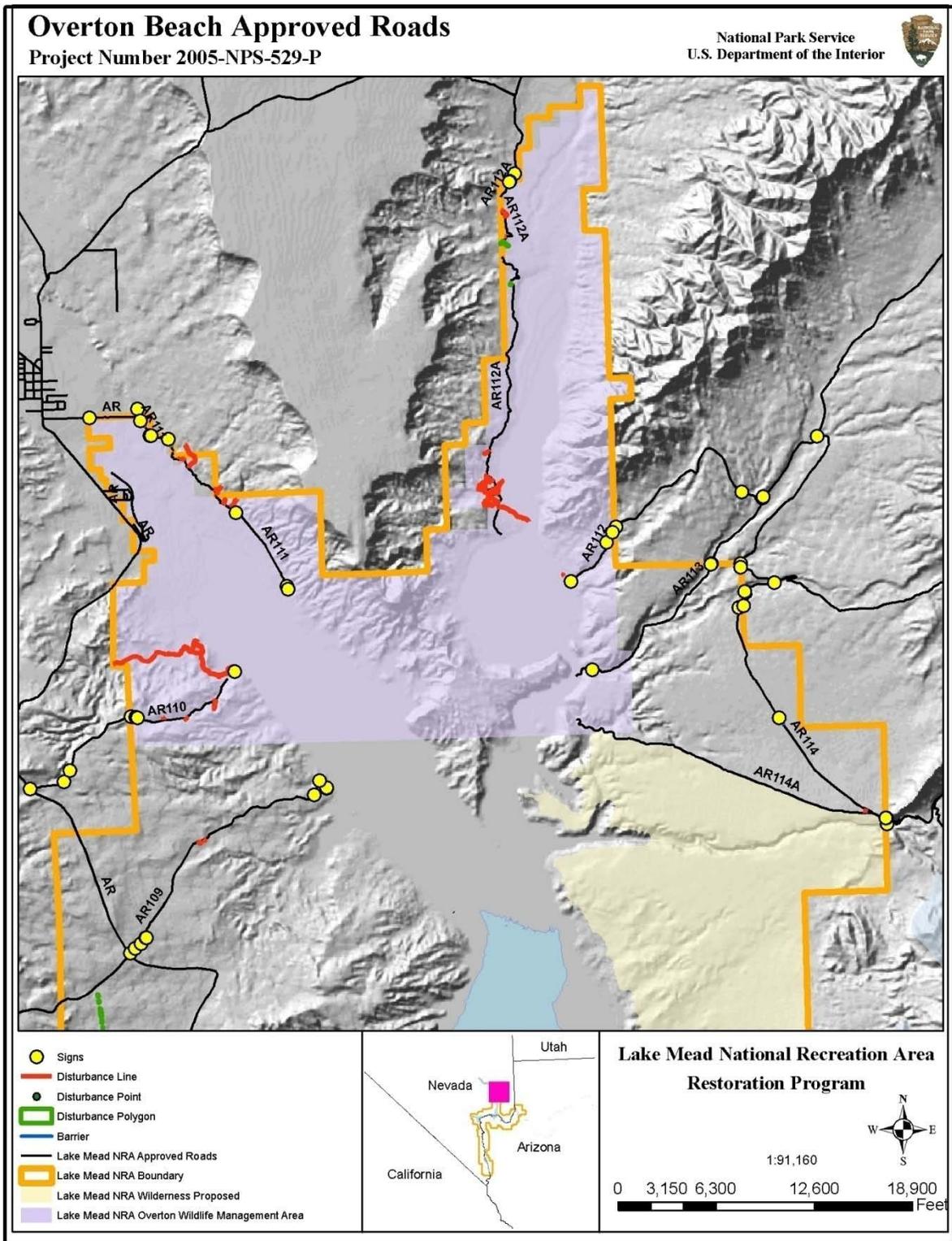
Post: PTEB106-051128-134629 *Northing:* 4032657 *Easting:* 731927

Sign: S1 Road Name\15 Day Camping Limit\4x4 Recommended Not replaced during this project

Post: PTEB106-071216-151353 *Northing:* 4031811 *Easting:* 733641

Sign: S1 End of Road Not replaced during this project

Figure 9. Map of Overton Beach Region's Disturbances and Approved Roads



Overton Beach Region Backcountry Roads

AR 109 (Old St. Thomas Road), AR 109A (Old St. Thomas Road A), and AR 109B (Old St. Thomas Road B) are roads that lead to St. Thomas Point. AR 109A&B are smaller roads that fork off the end of AR 109. AR109 is located off of Northshore road across from the Valley of Fire road and provides access to popular hiking trails. Several times during this project the road was closed either due to the Northshore Reconstruction Project or because the road washed out from rainfall. One disturbance was recorded between AR 109A and AR 109 B. Nine disturbances were recorded on AR 109. The majority of the disturbances on this road were in the middle section where SUVs or trucks tried to get around the powerline access road gate, damaging sensitive biological soil crusts.

AR 109 - Old St Thomas Rd

<i>Post:</i> PTEB109-051128-135407	<i>Northing:</i> 4036045 <i>Easting:</i> 730682
<i>Sign:</i> S1 Pictorial No Vehicles	Not replaced during this project
<i>Post:</i> PTOB109-051128-135305	<i>Northing:</i> 4035950 <i>Easting:</i> 730588
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTOB109-051128-140400	<i>Northing:</i> 4036138 <i>Easting:</i> 730793
<i>Sign:</i> S1 No Trash Cans	Not replaced during this project
<i>Post:</i> PTOB109-051128-140534	<i>Northing:</i> 4036252 <i>Easting:</i> 730894
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTOB109-051128-140658	<i>Northing:</i> 4036246 <i>Easting:</i> 730898
<i>Sign:</i> S1 Road Closed for Resource	Not replaced during this project
<i>Post:</i> PTOB109-051128-141533	<i>Northing:</i> 4039043 <i>Easting:</i> 734176
<i>Sign:</i> S1 No Camping	Not replaced during this project
<i>Sign:</i> S2 Open Sunrise to Sunset	Not replaced during this project
<i>Post:</i> PTOB109-051128-141949	<i>Northing:</i> 4039168 <i>Easting:</i> 734420
<i>Sign:</i> S1 Metal Detectors Prohibited	Not replaced during this project
<i>Post:</i> PTOB109-051128-142148	<i>Northing:</i> 4039179 <i>Easting:</i> 734423
<i>Sign:</i> S1 Trail Name & Distance	Not replaced during this project
<i>Post:</i> PTOB109-051128-142454	<i>Northing:</i> 4039324 <i>Easting:</i> 734286
<i>Sign:</i> S1 Metal Detectors Prohibited	Not replaced during this project

AR 110 (Sand Mine Road) is located about five miles from Overton, NV, This road historically provided lake access, but no longer does due to receding lake levels. This road is directly adjacent to Poverty Flats on BLM land. Fall through spring, Poverty Flats is a popular spot for recreation vehicles (RVs) to camp for free. The disturbances on this road mainly came during the fall and winter months. Eighteen disturbances were recorded on AR 110. The main types of disturbances seen on this road were hill climbs by SUVs and dirt bikes.

AR 110 - Sand Mine Rd

<i>Post:</i> PTOB110-051128-145058	<i>Northing:</i> 4039159 <i>Easting:</i> 728631
<i>Sign:</i> S1 ROAD NAME/Camping 15 Day Limit	Not replaced during this project
<i>Post:</i> PTOB110-051128-145800	<i>Northing:</i> 4040554 <i>Easting:</i> 730693
<i>Sign:</i> S1 Hunting Area No Target Shooting	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4x4	Not replaced during this project
<i>Post:</i> PTOB110-051128-150428	<i>Northing:</i> 4040548 <i>Easting:</i> 730725
<i>Sign:</i> S1 Hunting Access Through Main Gate Only	Not replaced during this project
<i>Post:</i> PTOB110-051128-152132	<i>Northing:</i> 4041448 <i>Easting:</i> 732627
<i>Sign:</i> 31 End of Road: No Vehicles Beyond This Point	Replaced 3/26/2009 - missing 2/26/09
<i>Post:</i> PTOB110-060907-111828	<i>Northing:</i> 4040570 <i>Easting:</i> 730600
<i>Sign:</i> S1 Entering Lake Mead	Not replaced during this project
<i>Post:</i> PTOB110-080521-112104	<i>Northing:</i> 4039519 <i>Easting:</i> 729403
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTOB110-080521-134243	<i>Northing:</i> 4039293 <i>Easting:</i> 729289
<i>Sign:</i> S1 AR arrow	Not replaced during this project

AR 111 (Muddy River Access Road) is near Overton, NV. This road historically provided lake access, but no longer does due to receding lake levels. Although the road no longer provides lake access, it does provide access to the Overton Wildlife Management Area, which is located parallel to the road. The Honey Bee Parking area is located along the road, which was used by visitors who recreated in the wildlife management area. Most vehicle use along the road was by Overton residents using All Terrain Vehicles (ATVs). Thirty four disturbances were recorded on AR 111. These disturbances mainly followed washes or looped on and off the approved road.

AR 111 - Muddy River Access Rd

<i>Post:</i> PTOB111-051129-080707	<i>Northing:</i> 4044554 <i>Easting:</i> 732655
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-051129-082820	<i>Northing:</i> 4045982 <i>Easting:</i> 731332
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-051129-083822	<i>Northing:</i> 4046058 <i>Easting:</i> 730974
<i>Sign:</i> S1 EVERYTHING	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-051129-083939	<i>Northing:</i> 4046053 <i>Easting:</i> 730992
<i>Sign:</i> S1 Honey Bee Parking Area/No Camping	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-051129-084128	<i>Northing:</i> 4046342 <i>Easting:</i> 730785
<i>Sign:</i> S1 Off Road Travel Prohibited	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-051129-084622	<i>Northing:</i> 4046399 <i>Easting:</i> 729791
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Sign:</i> S2 Hunting Area No Target Shooting	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-061114-135309	<i>Northing:</i> 4046582 <i>Easting:</i> 730726
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-071216-132514	<i>Northing:</i> 4043110 <i>Easting:</i> 733645
<i>Sign:</i> S1 EVERYTHING	Not replaced during this project
<hr/>	
<i>Post:</i> PTOB111-071216-133024	<i>Northing:</i> 4043061 <i>Easting:</i> 733670
<i>Sign:</i> S1 No Vehicles Beyond This Point	Not replaced during this project

AR 112 (Virgin River Access Road) is located in the Gold Butte area of the Park. This is a road that follows a small ridge line into a wash and ends in dense tamarisk. This road historically provided access to Lake Mead, but no longer does due to receding lake levels. No disturbances were recorded on this road. Barrier repairs were needed after heavy rains washed them out and backcountry signs had to be replaced because they were shot or stolen.

AR 112 - Virgin River Access Rd

<i>Post:</i> PTOB112-051024-114350	<i>Northing:</i> 4043204 <i>Easting:</i> 739188
<i>Sign:</i> S1 End of Road	Not replaced during this project
<i>Post:</i> PTOB112-051024-120228	<i>Northing:</i> 4043974 <i>Easting:</i> 739891
<i>Sign:</i> S1 Vehicles Permitted Only on Approved Roads	Replaced 3/24/2009
<i>Post:</i> PTOB112-051024-120506	<i>Northing:</i> 4044276 <i>Easting:</i> 740073
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Sign:</i> S2 AR arrow	Not replaced during this project
<i>Post:</i> PTOB112-051024-121444	<i>Northing:</i> 4044961 <i>Easting:</i> 742522
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTOB112-051024-121727	<i>Northing:</i> 4044842 <i>Easting:</i> 742933
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Sign:</i> S2 AR arrow	Not replaced during this project
<i>Post:</i> PTOB112-051024-122030	<i>Northing:</i> 4044863 <i>Easting:</i> 742944
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTOB112-060130-131545	<i>Northing:</i> 4053652 <i>Easting:</i> 749437
<i>Sign:</i> S1 ROAD NAME	Replaced 4/14/2009 - sign incorrect
<i>Post:</i> PTOB112-090414-141909	<i>Northing:</i> 4044171 <i>Easting:</i> 740005
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 112A (Virgin River West Road) is located on the eastern side of Mormon Mesa not far from Overton, NV. This is a sandy road that follows the Virgin River south. This road historically provided access to Lake Mead, but no longer does due to receding lake levels. The area along the eastern side of the road and the end of the road is full of tamarisk. This road had limited monitoring especially during the first year of the project due to access and safety issues. This road was monitored 02/09, 4/09, 11/09, 3/10. Forty five disturbances were recorded on AR 112A. These disturbances were mostly ATVs or SUV/trucks following old illegal roads or visitors driving off into the desert. Visitors also drove past the end of the road to access a network of roads below the high water level.

AR 112A - Virgin River West Rd

<i>Post:</i> PTOB112A-090203-134939	<i>Northing:</i> 4051025	<i>Easting:</i> 738000
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 2/26/2009 - old	
<i>Sign:</i> S2 Hunting Area No Target Shooting	Replaced 2/26/2009 - old	
<hr/>		
<i>Post:</i> PTOB112A-090203-135321	<i>Northing:</i> 4051016	<i>Easting:</i> 737989
<i>Sign:</i> S1 OHV Prohibited-Must Be Legal and Licensed	Not replaced during this project	
<hr/>		
<i>Post:</i> PTOB112A-090226-104527	<i>Northing:</i> 4051010	<i>Easting:</i> 737986
<i>Sign:</i> S1 ROAD NAME	Replaced 2/26/2009 - damaged	
<hr/>		
<i>Post:</i> PTOB112A-090226-111120	<i>Northing:</i> 4051178	<i>Easting:</i> 738093
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project	

AR 113 (Fisherman's Cove Road) is in the Gold Butte area and forks southwest off of AR 112. This road follows a wash towards Lake Mead. The road ends short of the Virgin River due to a major washout along the final section of the road. During this project, no disturbances were documented on this road. The major issue on this road was signs being shot or stolen.

AR 113 - Fisherman's Cove Rd

<i>Post:</i> PTOB113-051024-123329	<i>Northing:</i> 4043555	<i>Easting:</i> 741932
<i>Sign:</i> S1 Entering Lake Mead/Travel on AR	Not replaced during this project	
<i>Sign:</i> S2 Hunting Area No Target Shooting	Not replaced during this project	
<hr/>		
<i>Post:</i> PTOB113-070912-112953	<i>Northing:</i> 4041486	<i>Easting:</i> 739606
<i>Sign:</i> S1 End of Road	Not replaced during this project	
<hr/>		
<i>Post:</i> PTOB113-070912-121513	<i>Northing:</i> 4043546	<i>Easting:</i> 741926
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project	

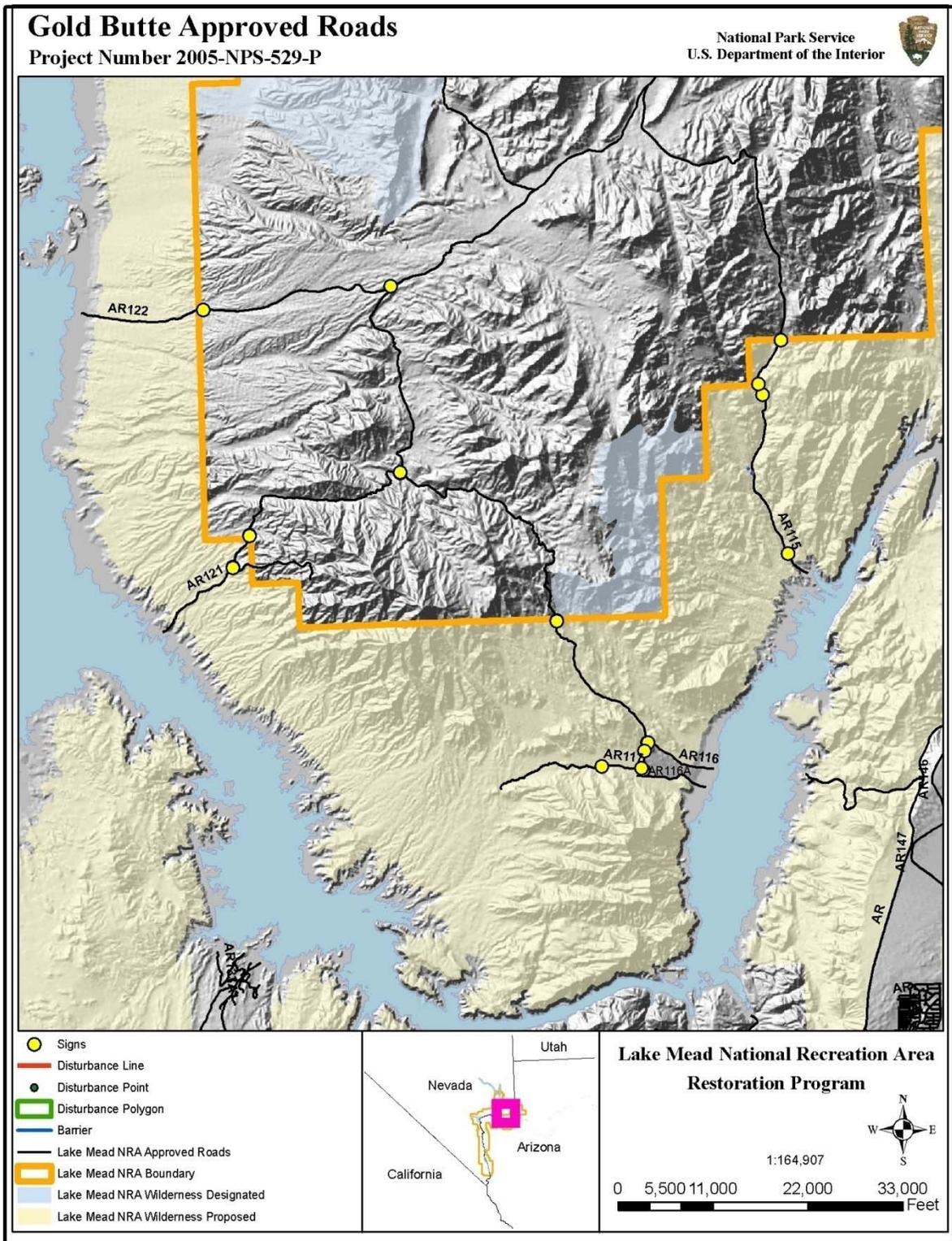
AR 114 (Red Bluff Spring Road) is a road that transverses several washes along a plateau. In the spring/summer 2009 the BLM closed a road that provided access to AR114 from the west. After discussion with NPS, the BLM later re-opened this road to provide access to AR114. Four disturbances were recorded on this road. The main issue on AR114 was an old illegal road that travelled west which was a popular route for off-road activities. With repeated restoration and barrier installation, the disturbance

along the illegal road was minimized. Another issue was that an “Entering Lake Mead; No Motor Vehicles beyond This Point” sign near Red Bluff springs in Mud Wash was repeatedly stolen. Mud Wash was a well-used illegal access route to Lake Mead which became less used after the BLM closed the main access road to the Red Bluff Springs area.

AR 114 - Red Bluff Spring Rd

<i>Post:</i> PTGB114-090414-132823	<i>Northing:</i> 4038474 <i>Easting:</i> 745359
<i>Sign:</i> S1 No Vehicles Beyond This Point	Replaced 1/21/2009 - missing 11/25/08 Replaced 3/24/2009 - missing
<i>Post:</i> PTOB114-071211-103708	<i>Northing:</i> 4046051 <i>Easting:</i> 744001
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTOB114-071211-105124	<i>Northing:</i> 4043558 <i>Easting:</i> 742501
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTOB114-071211-105606	<i>Northing:</i> 4043490 <i>Easting:</i> 742502
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTOB114-071211-110705	<i>Northing:</i> 4043185 <i>Easting:</i> 743165
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTOB114-071211-112100	<i>Northing:</i> 4043007 <i>Easting:</i> 742580
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Post:</i> PTOB114-090226-125253	<i>Northing:</i> 4040541 <i>Easting:</i> 743251
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<i>Post:</i> PTOB114-090226-125923	<i>Northing:</i> 4042701 <i>Easting:</i> 742467
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Post:</i> PTOB114-090226-130144	<i>Northing:</i> 4042734 <i>Easting:</i> 742562
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Sign:</i> S2 Entering Lake Mead	Not replaced during this project
<i>Post:</i> PTOB114-090414-133127	<i>Northing:</i> 4038587 <i>Easting:</i> 745346
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<i>Post:</i> PTOB114-090414-133225	<i>Northing:</i> 4038588 <i>Easting:</i> 745341
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

Figure 10. Map of Gold Butte Region's Disturbances and Approved Roads



Gold Butte Region Backcountry Roads

AR 115 (Devil's Cove Road) is a road in the southern section of Gold Butte. This road starts out as a wide, graded road and turns into a difficult 4x4 road that follows a wash to where the Colorado River meets Lake Mead. This road used to be a take out spot for people traveling down the Colorado River, but since the water has receded, visitors prefer to take out at Pearce Ferry. This road mainly received ATV use, especially during the hunting season. Four disturbances were recorded on AR 115. The major issue along this road was an illegal route connecting AR115 with a BLM road. This illegal route traveled northwest off of AR115 from the middle section of the road into a proposed wilderness area. The restoration crew installed two barriers along this illegal route to prevent off-road activities. For several months after the barrier installation, the restoration crew would regularly have to re-install posts or tighten the barriers' cable. Before the BLM installed a barrier on their end of the illegal route, it appeared that visitors would travel down the illegal road from the BLM side, reached the NPS barriers and instead of turning around would tear the barriers out of the ground. After the BLM installed a barrier on their end of the illegal route, the NPS barrier did not get disturbed as often. This road frequently washed out, which changed the location of the road. This natural re-locating of the road would sometimes result in signs no longer being along the travelled route.



Picture looking south down AR 115 near park boundary

AR 115 - Devils Cove Rd

<i>Post:</i> PTGB115-051201-081425	<i>Northing:</i> 4011512 <i>Easting:</i> 759435
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 Climb to Safety	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB115-051201-083557	<i>Northing:</i> 4005903 <i>Easting:</i> 760347
<i>Sign:</i> S1 Camping 15 Day Limit	Not replaced during this project
<i>Sign:</i> S2 No Trash Cans	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB115-081214-134943	<i>Northing:</i> 4011882 <i>Easting:</i> 759284
<i>Sign:</i> S1 Travel Only on AR	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB115-081214-140700	<i>Northing:</i> 4013435 <i>Easting:</i> 760086
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project

AR 116 (Scanlon Ferry Road) is located in the Gold Butte area and follows a wash to Lake Mead. This road is one of the most technical and difficult 4x4 roads in the park. The road passes a few old mine sites that are now closed and provides lake access across from South Cove. This area was well-used by burros and other wildlife. One disturbance was recorded on AR 116; a visitor travelled on the historic road. Disturbances were minimal, presumably due to the technical nature of the road.

AR 116 - Scanlon Bay Rd

<i>Post:</i> PTGB116-051025-074138	<i>Northing:</i> 4008756 <i>Easting:</i> 746645
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB116-090225-154625	<i>Northing:</i> 4003515 <i>Easting:</i> 752166
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 Climb to Safety	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB116-090225-155130	<i>Northing:</i> 4003526 <i>Easting:</i> 752164
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 4/13/2009 - damaged 2/25/09
<hr/>	
<i>Post:</i> PTGB116-090225-161351	<i>Northing:</i> 3999222 <i>Easting:</i> 755384
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB116-090225-161755	<i>Northing:</i> 3999216 <i>Easting:</i> 755400
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB116-090225-162244	<i>Northing:</i> 3998930 <i>Easting:</i> 755269
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project
<i>Sign:</i> S2 AR arrow - 4X4	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB116-090225-164456	<i>Northing:</i> 3998253 <i>Easting:</i> 755234
<i>Sign:</i> S1 AR arrow - 4X4	Not replaced during this project

AR 116A (Scanlon Bay Road) is a road that splits off of AR 116 and passes an old mine and airstrip. The road used to end at the water before the lake levels receded; it now ends at a large pile of driftwood. The road was hard to navigate in sections because of infrequent use. This road had a few disturbances, mostly due to people becoming confused as to where the approved road was located.

AR 117 (Jumbo Pass Road) splits off of AR 116A and follows a small wash west to a choke point in a very steep canyon. The road at times was hard to follow due to infrequent use. Due to infrequent use, disturbances along this road were minimal. One disturbance was recorded at the end of AR 117.

AR 117 - Jumbo Pass Rd

<i>Post:</i> PTGB117-090225-164255	<i>Northing:</i> 3998255 <i>Easting:</i> 755231
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB117-090225-164649	<i>Northing:</i> 3998315 <i>Easting:</i> 755171
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB117-090225-165110	<i>Northing:</i> 3998384 <i>Easting:</i> 753756
<i>Sign:</i> S1 AR arrow	Not replaced during this project

AR 121 (Lakeside Bay Road) is located in the Gold Butte area accessing the very eastern side of the Virgin Basin. The approved road follows a wash for a while before climbing over a ridge and ending at the water. This road has several fences to keep cattle and burros off of the road. No disturbance was documented on this road most likely due to most of the road being fenced or having steep terrain. Several sections of this road are very narrow due to washouts and are not accessible by wide-base vehicles.

AR 121 - Lakeside Bays Rd

<i>Post:</i> PTGB121-051025-074237	<i>Northing:</i> 4008771 <i>Easting:</i> 746637
<i>Sign:</i> S1 AR arrow	Replaced 4/14/2009 - sign incorrect
<hr/>	
<i>Post:</i> PTGB121-051025-084428	<i>Northing:</i> 4006555 <i>Easting:</i> 741319
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB121-051025-084703	<i>Northing:</i> 4006531 <i>Easting:</i> 741329
<i>Sign:</i> S1 ROAD NAME	Replaced 4/14/2009 - missing
<hr/>	
<i>Post:</i> PTGB121-051025-085658	<i>Northing:</i> 4005409 <i>Easting:</i> 740744
<i>Sign:</i> S1 AR arrow	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB121-070523-160726	<i>Northing:</i> 4008776 <i>Easting:</i> 746651
<i>Sign:</i> S1 Travel Only on AR	Not replaced during this project

AR 121A (Lakeside Mine Road) is in the Gold Butte area forking east off of AR121. This road is very rocky and follows a fence line all the way out of the park, eventually ending at a mine on BLM land. During this project, no disturbance was documented on this road, most likely due to the fence line and steep terrain on either side of the road.

AR 121A - Lakeside Mine Rd

<i>Post:</i> PTGB121A-090414-085229	<i>Northing:</i> 4005402 <i>Easting:</i> 740747
<i>Sign:</i> S1 ROAD NAME	Not replaced during this project

AR 122 (Catclaw Wash Road) is located in the Gold Butte area and follows a wash to the Overton Arm of Lake Mead. Along this road there is access to a seasonal spring and cattle corral on the BLM side. The main issue on this road was visitors driving below the high water mark an unknown distances along the shoreline. Besides the extensive shoreline driving, no disturbance was documented on this road.

AR 122 - Catclaw Wash Rd

<i>Post:</i> PTGB122-051024-163038	<i>Northing:</i> 4015342 <i>Easting:</i> 746311
<i>Sign:</i> S1 Hunting Area No Target Shooting	Not replaced during this project
<i>Sign:</i> S2 ROAD NAME	Not replaced during this project
<hr/>	
<i>Post:</i> PTGB122-051024-165953	<i>Northing:</i> 4014507 <i>Easting:</i> 739683
<i>Sign:</i> S1 Welcome to Lake Mead NRA	Replaced 6/20/2008 - old
<hr/>	
<i>Post:</i> PTGB122-070523-164040	<i>Northing:</i> 4015338 <i>Easting:</i> 746313
<i>Sign:</i> S1 Travel Only on AR	Replaced 6/20/2008 - old

Final Discussion

During this project, there were a total of 559 disturbances reported on the 91 Nevada backcountry approved roads that were part of the 2005-NPS529-P project. Many disturbances were either visitors following washes or visitors performing hill climbs. These patterns of disturbance were not seen at Placer cove (AR 47) and Eagle Wash (AR 46) where the main type of disturbance was graffiti. During the summer, disturbances were concentrated near the water such as the graffiti at Placer Cove. Trash at the coves was also a major issue during the summer. ORV disturbances were more common in the winter on roads that did not necessarily access the water. Certain areas of the park had barrier destruction issues, particularly:

- AR 9
- AR 13
- AR 44
- AR 45
- AR 47
- AR 115.

All of these roads except AR 13 and AR 115 accessed the water.

Goal Fulfillment

Goal #1: Perform road, sign, fence, and barrier maintenance to help reduce illegal off-road travel in Lake Mead National Recreation Area due to public ignorance and deliberate deviation from approved routes.

In an effort to reduce off-road travel, 463 backcountry road signs were maintained, and 117 signs were installed because they were damaged, missing or never existed. NPS resource management staff restored 52 miles and 9.0 acres of disturbance and constructed over 5 miles of barrier from April 1, 2008 to April 1, 2010 on the Nevada side of the park to reduce illegal off-road travel. Off-road travel was reduced with signage, barrier repair, and track rehabilitation. An example of regular barrier maintenance altering visitor use was the barrier at the end of AR12, Tri-State Road. This barrier was installed on January 8, 2009. On June 4, 2009, the barrier was repaired because the cable was torn down. On August 6, 2009, the barrier was repaired again because the cable was torn down. The barrier has not been repaired since August, 2009. Another example of Park personnel vigilance in the backcountry having an impact on visitor activities was the Camping/No Target Shooting sign on AR58 near a cliff. This sign was installed after a major clean up of the ravine below. This sign was installed on April 23, 2008. After being repeatedly shot, it became unreadable, and was replaced on October 22, 2008. The restoration program replaced the sign again on March 16, 2009 after repeated shooting of the sign rendered it

unreadable. The sign has not been replaced since March 16, 2009, and it currently has minimal shooting marks.

Goal #2: Provide information relating to road conditions, disturbance, and sign conditions to the appropriate National park Service programs and management.

After every road monitoring day, an e-mail would be sent to law enforcement detailing disturbances and observances in the field. If applicable, e-mails would also be sent to maintenance for road maintenance issues, and management staff to help inform their backcountry road decisions. This communication with other divisions created a more collaborative work environment, and facilitates better management of the backcountry road system. Law enforcement was able to target specific problem areas during peak use times due to the information that the restoration program provided them. If major issues arose in the backcountry, management was informed in a timely manner leading to better, more informed decisions being made about backcountry regulations and issues. Maintenance was also able to repair backcountry roads in a timelier manner due to the information received from the road monitoring program.

Goal #3 Cooperate with the Bureau of Land Management (BLM) by performing standardized documentation and monitoring so that conditions may be compared on a landscape scale.

The NPS restoration staff worked collaboratively with not only BLM staff, but also Forest Service and Fish and Wildlife staff to standardize data collection. Over the past two years, an interagency database termed the Disturbance Assessment Restoration Treatment Team (DART) database has been designed, built and field tested. The four federal agencies worked with UNLV staff to develop the database. The team met on a monthly to bimonthly basis to discuss database needs and issues. Through this process, all four agencies have started collecting data in a similar format.

The NPS restoration program staff also regularly cooperates and corresponds with BLM restoration program staff and the BLM road coordinator on restoration and backcountry road needs and issues that impact both agencies.

Recommendations

A project similar to Project 2005-NPS-529 should be continued in order to collect more long-term data. A long-term dataset would allow for a more meaningful analysis of trends in visitor use and response to management practices. A two year dataset, while useful, is limited in its ability to predict and make accurate conclusions from analysis. A short term dataset may capture unusual events, such as road construction or weather events, which may skew the data and consequently the resulting conclusion(s). These

unusual events could be put into perspective with a long-term dataset and analysis. Additional questions that could be answered by the data analysis are the following:

- Which area(s) of each road is/are receiving the most disturbance?
- Would signage be an appropriate information tool/deterrent in each disturbed area?
- For each road, what are the dominant disturbance types?

Answers to these questions would inform the restoration program where signs would be most appropriate. It would also make the sign messages more relevant to visitor use. If graffiti is the dominant disturbance type, then perhaps signs prohibiting graffiti would be appropriate leading to reduced occurrence of graffiti. If off-road travel is the dominant along a certain section of road, have signs that inform visitors about the damage caused by off-road travel, and have an approved arrow sign that further designates the approved route. If visitors know the reason behind staying on approved roads, the more conscientious visitors may be more likely to stay on the approved road.

The signs database helped NPS staff keep track of sign conditions and needs. In the future a simplified version of the database would be useful to the Park. A revised sign database would include the sign type and location along each road, and whether it needed to be replaced or had been replaced. Staff could use the database in the field to identify which type of sign had been installed at each location. The sign type and location could be linked to a picture aiding in sign requests and needs.

The road monitoring program should be continued in order to maintain a presence in the backcountry and to appraise barrier and road issues. If not monitored on a regular basis, off-road travel will likely proliferate and visitors may perceive that it is permissible to drive off-road because signs and barriers remain missing or damaged, and tracks are not restored encouraging further travel along and off of them.

Volunteers should be an integral part of the road monitoring program. Volunteers provide additional NPS presence in the backcountry, which lets visitors know that Park personnel do care what happens in the backcountry. A trial volunteer road monitoring project was recently developed to help assist restoration crew with the monitoring of roads in both Nevada and Arizona. Various volunteers drove a few select roads that met their skill level. They monitored for road, sign, and barrier conditions, and disturbances (illegal ORV traffic, graffiti, illegal campsites, etc.) and recorded them on the monitoring assessment form. They submitted the monitoring assessment form to the restoration manager. This trial program was modeled after the Lake Mead trail tracker program. The trail tracker program recruits volunteers to monitor various trails in the park. The trail tracker program helps the road monitoring program by reporting

disturbances, or barrier damage encountered by volunteers while driving to the trail or along the trail to the restoration manager.

In the future for the road monitoring program, more permanent volunteers should be “hired” that work a certain number of hours of week monitoring backcountry roads and performing minor road, disturbance, sign and barrier repair. By having specific volunteers designated to road monitoring on a weekly basis rather than on the “as you want to” basis of the trail tracker program, the volunteers will become more familiar with backcountry road issues, and can provide important information for reports and management decisions.

DISTURBANCE MONITORING

STANDARD OPERATING PROCEDURE

METHODS

1. Examine the park map and project map to get familiar with the approved road(s) before starting.
2. Identify what the historic disturbances, barriers, and signs are and where they are.
3. Radio (#700) or call (293-8988) into dispatch and notify them: Radio call number in service and checking approved road(s) number, number of people, and estimated time of return.
4. Slowly drive down the road and document incidents of illegal vehicle activity (called disturbances, re-disturbances), sign condition, road condition, and other observations which may be of interest. Please make notes or comments for sign recommendations with details about conditions, location, and type of sign.
5. Take photos of all signs if none have been taken.
6. If possible correct any conditions which can be performed immediately such as putting a barrier post or sign back in the ground.
7. Submit completed forms to project personnel in the Restoration Program.

DOCUMENTATION

Monitoring Assessment Form

Date	- the date of the monitoring (mm/dd/yyyy)
Approved	
Road #	- record the road #
Entire Road	
Monitored?	- check Y if the entire road was monitored and N if the entire road was not monitored. If N was checked then document how much and where the road was monitored and why it wasn't entirely monitored.
Assessing Party	- first and last names of observers (primary first), initials are ok
Additional	
Monitoring	
Documentation	- check the appropriate box for documentation collected other than the Monitoring Assessment Form.

Road Condition	- for initial monitoring provide detailed road conditions. Subsequent monitoring should note any changing road conditions, potential hazards, etc... Note locations for observations as applicable.
Description of any	
New damage	- describe illegal vehicle activity including: type of vehicle (length if known), where it goes or what occupants were doing (if inferable), missing or damaged signs or barriers, etc...
Other comments	- use this section to document any interesting observations such as exotic species, litter, wildlife, cattle, burros, cultural sites, etc... Suggestions or ideas for signs, barriers or other types of recommendations can be put in here.

Locations

Four ways to document locations:

- Descriptive – provide an estimated distance from landmarks and directions to. Road proximity to topographic features (e.g. wash, side hill, ridge, saddle, etc...)
- Mile Marker – at the start of the road, set the trip odometer to zero. When an item of interest is found, note the trip mileage, side of road, perpendicular distance from road, and provide a brief description.
- Map – mark the location on a map with corresponding labels for narratives.
- Coordinates – record the location with a GPS unit and indicate the coordinate system projection (if any) and datum (UTM, Zone 11, and NAD 83 are preferred). *This is the preferred method.*

Photos & GIS

Take initial photos of all signs, disturbances, unique road conditions, or other interesting observations. Photos for multiple signs of the same type are not required (e.g. AR ###, 4x4).

Photos are not required during subsequent monitoring events unless something changes. Provide descriptions of the photos and associated names if it is not evident in the data sheet comments or if there are duplicate features. Electronic files should be placed in the corresponding road folder under: S:\DisturbanceAssessment\Adopt_A_Road\Inbox\AR#.

Signs

A table of signs for the approved road is provided. If a sign is damaged or missing document it on the monitoring assessment form. Take a photo of damaged signs. Document new signs encountered that are not in the tables. Carsonites with signs are not inventoried.

DEFINITIONS

Disturbance – an initial recording of a site that is altered, degraded, or destroyed due to direct or indirect human activities.

Redisturbance – an area which has already been recorded as a disturbance (most likely it has been restored, but it may not always be the case) but has new tracks; often associated with breached barrier occurrences.

Barriers - prevents additional resource damage

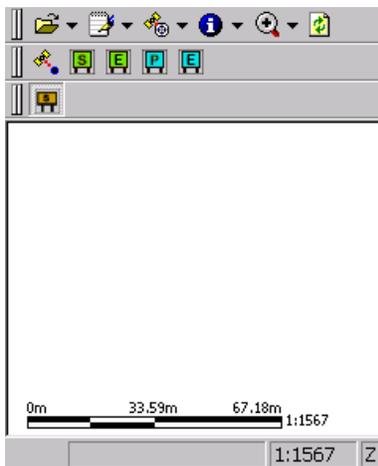
- Boulders
- Gate
- Tank Traps
- Metal Post & Cable
- Telephone Post & Cable
- T-Posts &/or Carsonites
- T-Post Fences

Monitoring of Road Conditions and Signs ArcPad Settings

Thales MobileMapper CE

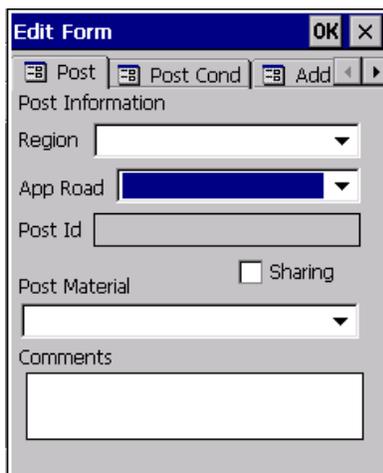
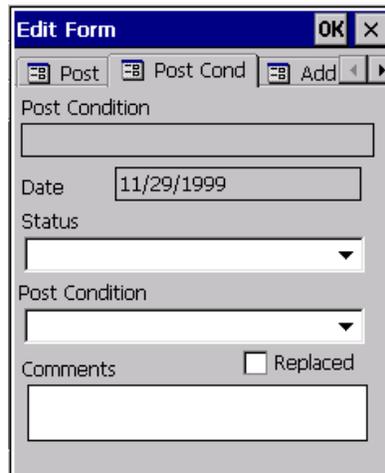
Data Collection

To begin collecting data you need to click on the  button and  toolbar will appear. Once the signs toolbar appears click on the  to start collecting spatial data information. Once the location data has been collect you can begin filling out the Post Information and Condition Data Entry Forms and the Sign Information and Condition Data Entry Forms.



Signs Data Dictionary

- Post Information and Condition Data Entry Forms

A screenshot of the 'Edit Form' dialog box in the software. The dialog has a title bar with 'Edit Form', 'OK', and 'X' buttons. Below the title bar are three tabs: 'Post', 'Post Cond', and 'Add'. The 'Post' tab is selected. The form contains several fields: 'Region' (a dropdown menu), 'App Road' (a dropdown menu), 'Post Id' (a text input field), 'Post Material' (a dropdown menu), and 'Comments' (a text area). There is also a checkbox labeled 'Sharing'.A screenshot of the 'Edit Form' dialog box in the software. The dialog has a title bar with 'Edit Form', 'OK', and 'X' buttons. Below the title bar are three tabs: 'Post', 'Post Cond', and 'Add'. The 'Post Cond' tab is selected. The form contains several fields: 'Post Condition' (a dropdown menu), 'Date' (a text input field with the value '11/29/1999'), 'Status' (a dropdown menu), 'Post Condition' (a second dropdown menu), and 'Comments' (a text area). There is also a checkbox labeled 'Replaced'.

- Sign Information and Condition Data Entry Forms

Edit Form OK X

Post Cond Add Sign

Please enter sign(s) on this post.
You are able to enter more than one sign.

Click button to add a sign

Add Sign

Sign OK X

Sign Condition

Sign Information

Sign Id
-S1

Type
[Dropdown]

Sign Material
[Dropdown]

Post Id
[Text Field]

Sign OK X

Sign Condition

Sign Condition
-S1-C

Date
4/8/2010

Status
[Dropdown]

Sign Condition
[Dropdown]

Comments Replaced

[Text Field]

ArcPad Options Menu:

ArcPad Options OK X

Protocol GPS Quality

Automatically Activate!

Protocol NMEA 0183

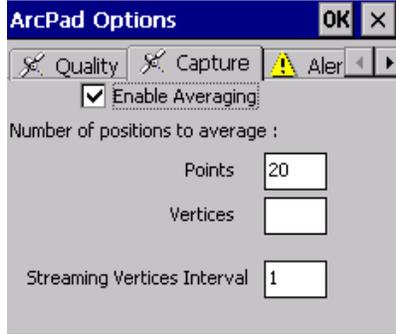
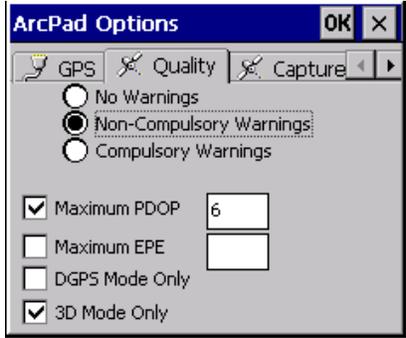
GPS Datum WGS84 (i)

Use Height In Datum Transform

GPS Initialization String

[Text Field]

ArcPad GPS Preferences:





Sign Shop Work Order Request



Fax (702)293-8640 or deliver request to Mary Carhart

Requested By: _____ **Contact #:** _____

Request Date: _____ **E-Mail Address:** _____

Location of Requested Sign: _____
(Area of Park)

Description of Sign: _____

Justification:
(Sign Vandalized, faded, new sign etc.) _____

# of Signs For This Location:	_____	_____	_____	_____
Speed Limit At Sign Location:	_____	_____	_____	_____
Is Hardware Requested?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No
Are Post (s) Requested?	<input type="checkbox"/>	Yes	<input type="checkbox"/>	No

Location# _____ **Asset #** _____ **Account To Be Charged:** _____
(If Known) (If Known) (REQUIRED)

(For Sign Shop Use Only)

Size of Sign:	_____
Sq. Ft. of Sign:	_____
Cost Per Sign:	_____
Number of Posts:	_____
Cost of Posts:	_____

Location #	_____
Asset #	_____
Work Order #	_____
Plt. _____ Pic. _____ Inv. _____	_____

Received By: _____

Date: _____

FMSS SIGN Contact Information: Mary_M_Carhart@nps.gov: 702-293-8740

Signs Field Check List

Personal Protective Equipment (PPE):

- Safety Vest
- Gloves
- Ear Protection
- Eye Protection

Tools:

- Wrench and Vise Grip
- Post Pounder
- Shovel
- Rock Bar/Tamping Bar

Consumable Supplies:

- Screws
- Nuts
- Washers
- Sign Post (9 foot/5 foot)

Other:

- First Aid Kit
- Potable Water
- 2 Way Radio
- Spare Tire
- Fire Extinguisher
- Approved Road Maps