



# **Lake Mead National Recreation Area**

**2005-NPS-526-P**

**Monitoring of Illegal Ground Disturbances in Response to  
Management Actions**

# Issues



- Limited staff to monitor a large area
- Time of disturbances were usually unknown
- Needed a systematic approach to surveying disturbances



# Goals

- Discover and treat illegal disturbances before they became illegal roads
- Provide information to LE and Restoration Crew for effective management
- Provide timely and accurate visitor use information to upper management

# Approach

- Find disturbance
- Collect data
- Mitigate damage
- Report to LE and Restoration Manager
- Provide information for public education
- Provide information to upper management

# Traffic Counters

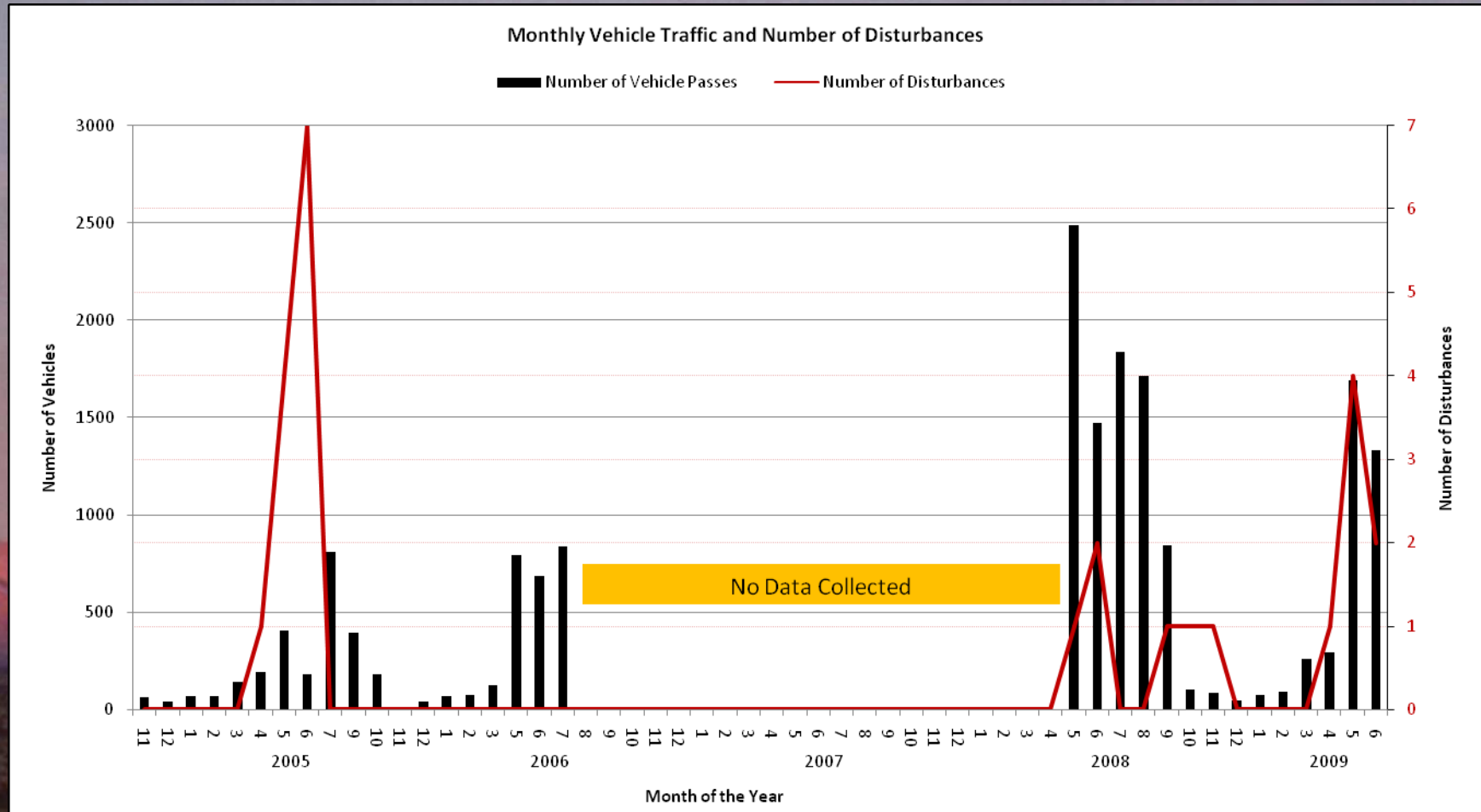
Nu-metric NC-30X



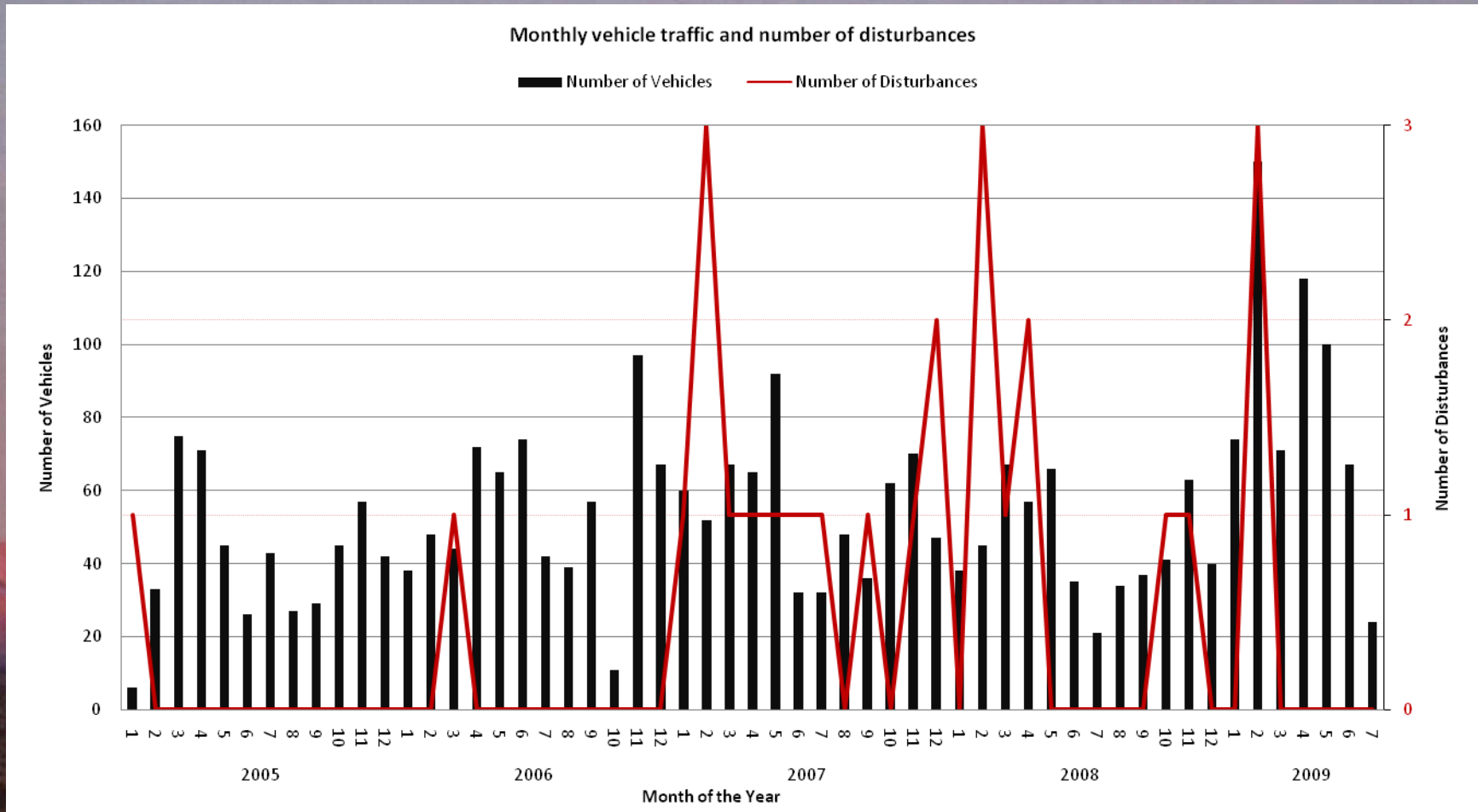
TRAFx Micro Magnetic™ sensor



# 6 Mile Cove Road (AR 31)

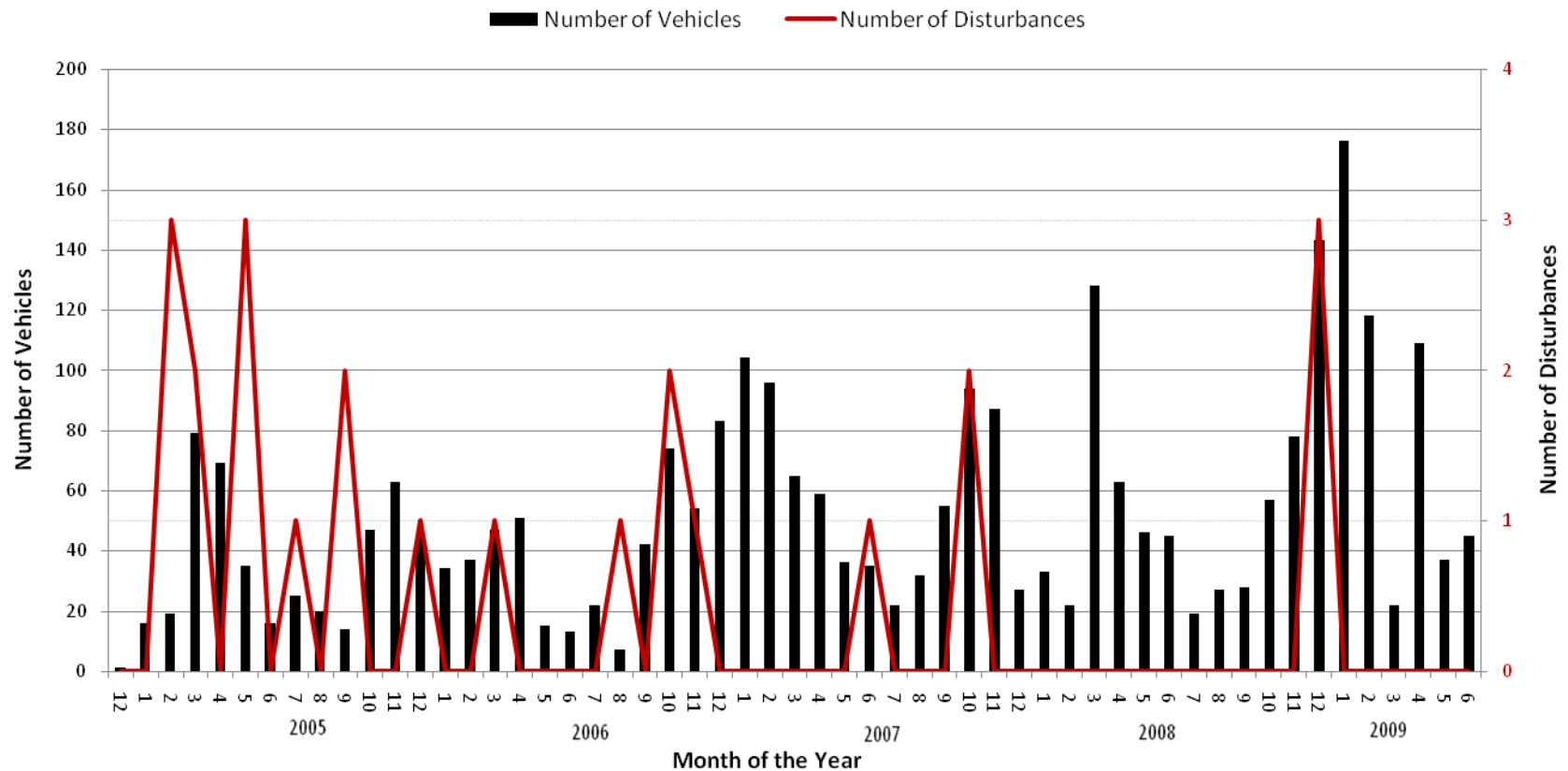


# Boathouse Cove Road (AR 97)



# Pipe Springs Road (AR 20A)

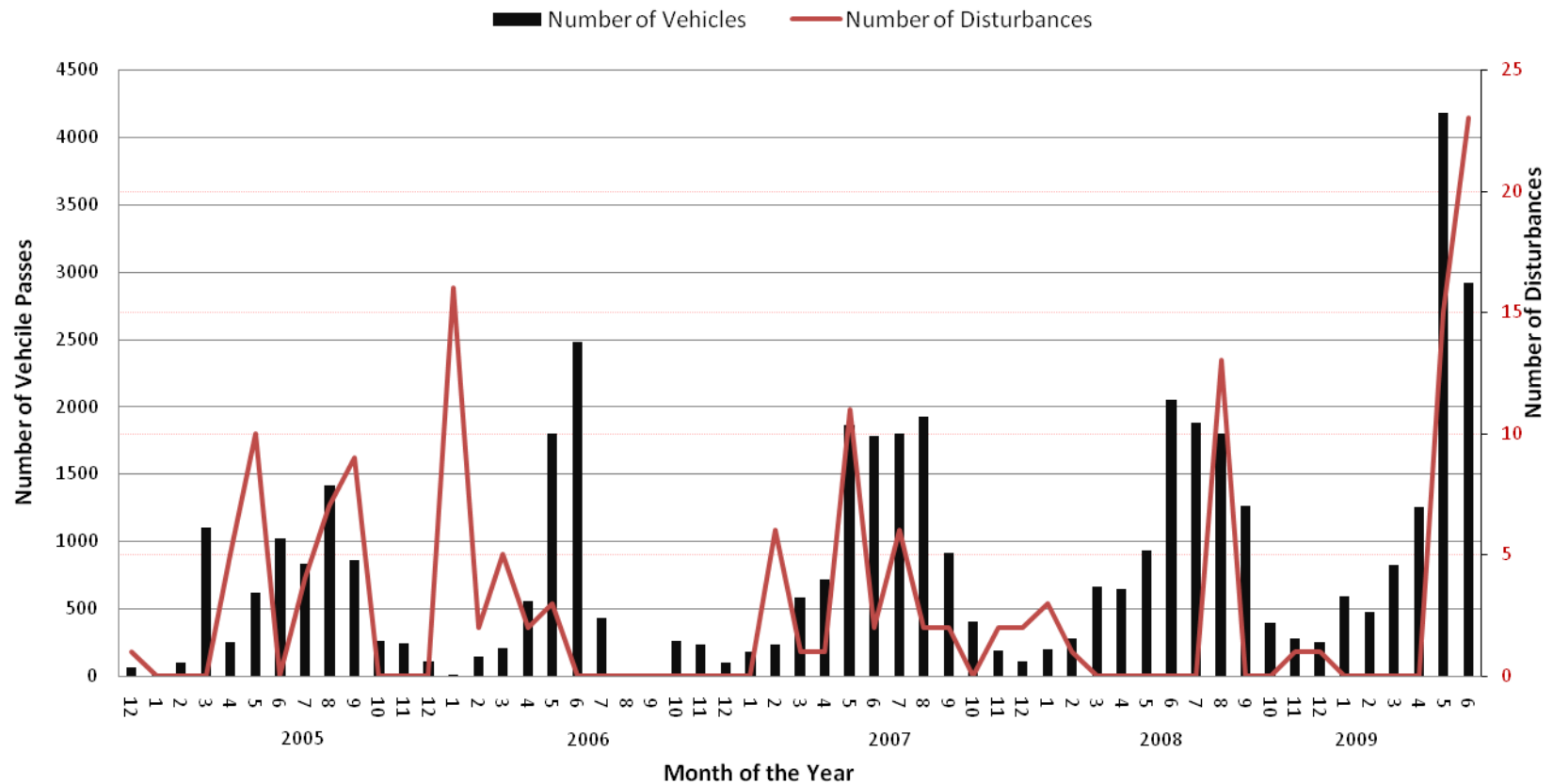
## Monthly vehicle traffic and Number of disturbances





# Placer Cove Road (AR 47)

## Monthly vehicle traffic and Number of Disturbances



System check...

\*\*\*\*\*V9.0b S/N80715 (c) 2001-2008\*\*\*\*\*

TRAFx Research Ltd. www.trafx.net

Fx:F6E0R1M3T2T\_c26f26L33LN4POA0E2\_m064I2\_d

Sets:N:H:001:008:M:012:000:F:Y:S:016:000:N:000

\*Serial Number :0807CJ

\*Counter name :AR 047 Placer Cove

\*Mode :Vehicle (VEH-4d)

\*Batt. voltage :4.3

\*Stored records :00625

=TIME (yy-mm-dd hh:mm):09-03-03,08:59:44

=START(yy-mm-dd hh:mm):09-02-05,10:00

PERIOD (1/24/0=Timestamps) :001

DELAY (see manual) :008

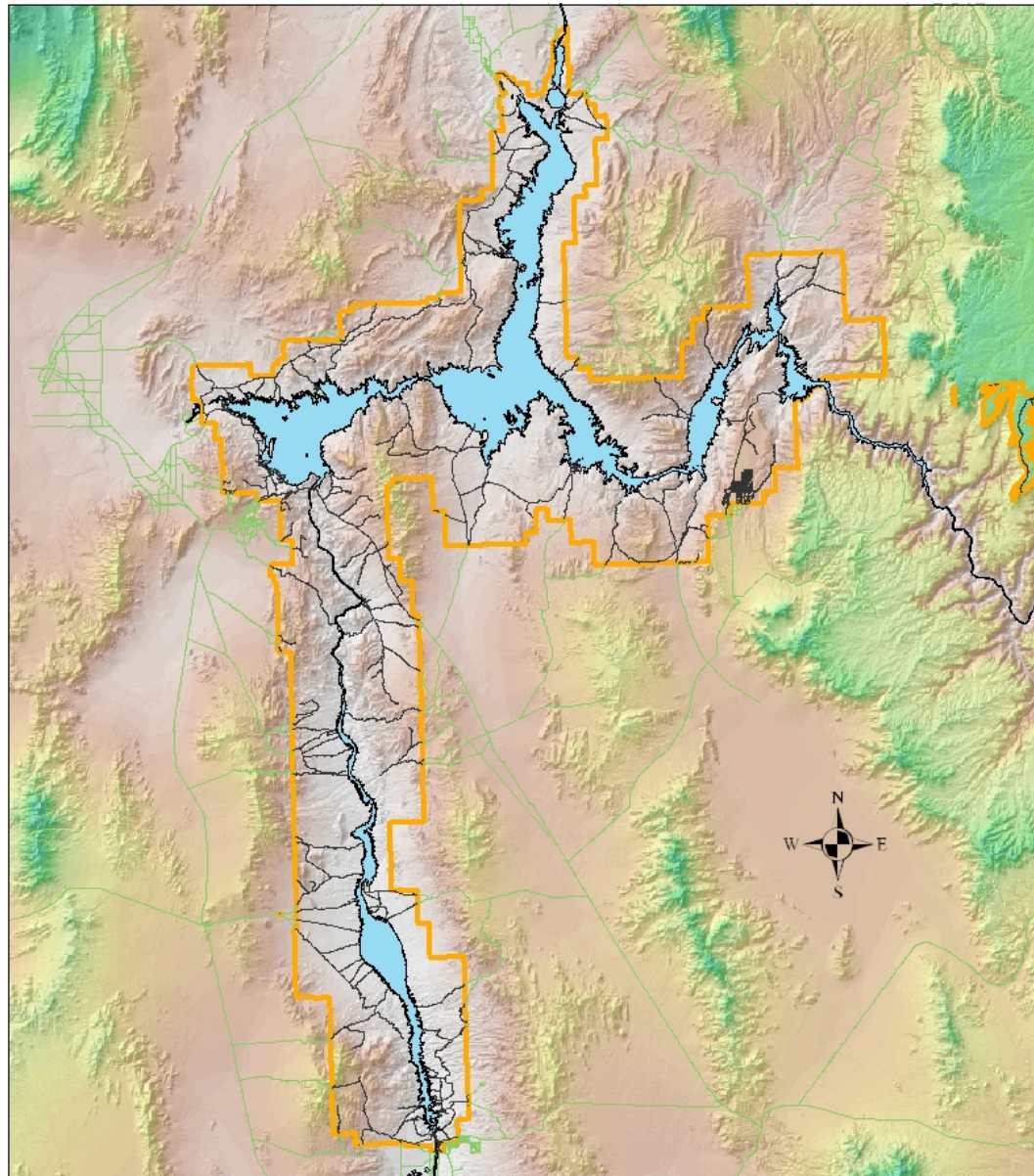
THRESHOLD (see manual) :012

RATE (Fast/Slow) :S

Calibration:04399

2009-02-05	10:00	1
2009-02-05	11:00	9
2009-02-05	12:00	6
2009-02-05	13:00	4
2009-02-05	14:00	4
2009-02-05	15:00	3
2009-02-05	16:00	0
2009-02-05	17:00	3
2009-02-05	18:00	2
2009-02-05	19:00	0

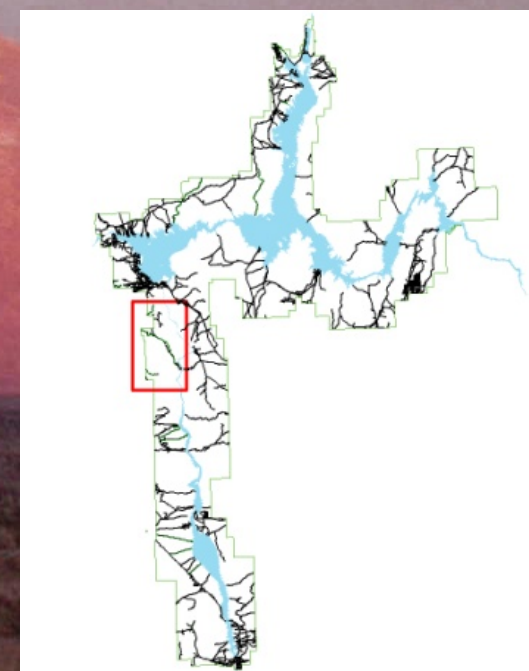
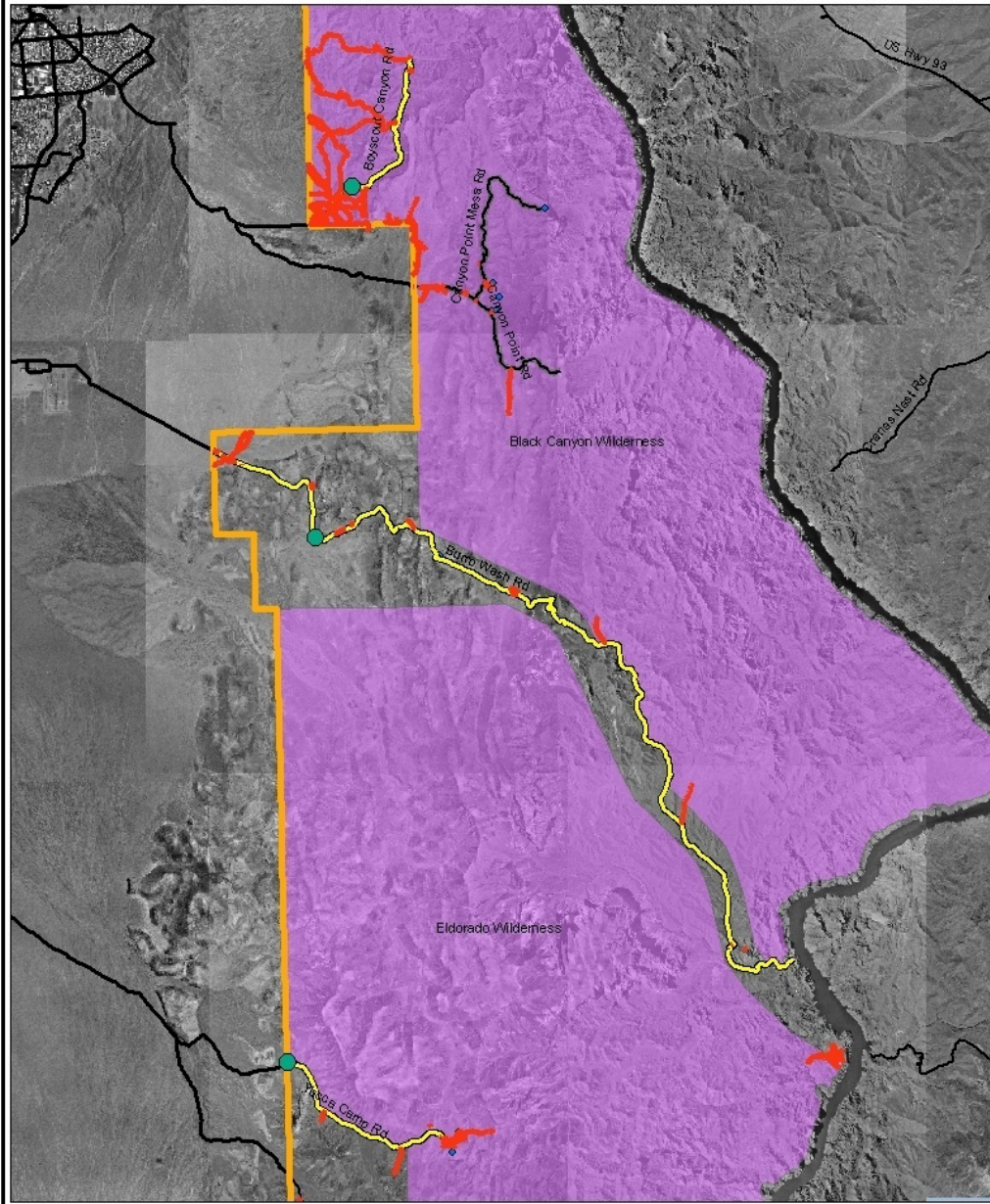
# Lake Mead National Recreation Area



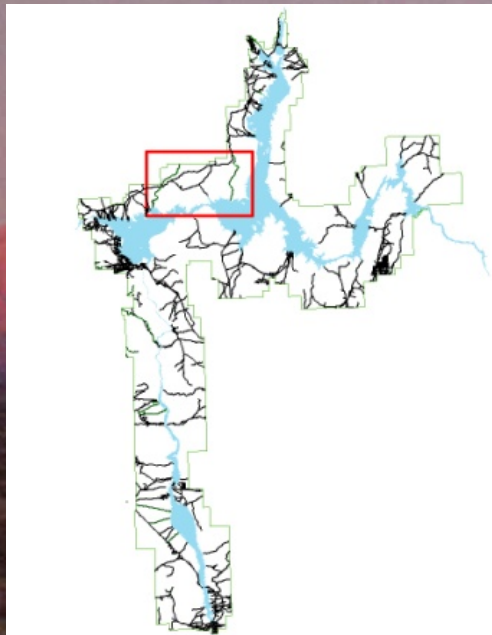
- Lake Mead NRA Roads
- County Roads
- NPS Boundary

# Boulder City Area

National Park Service  
U.S. Department of the Interior

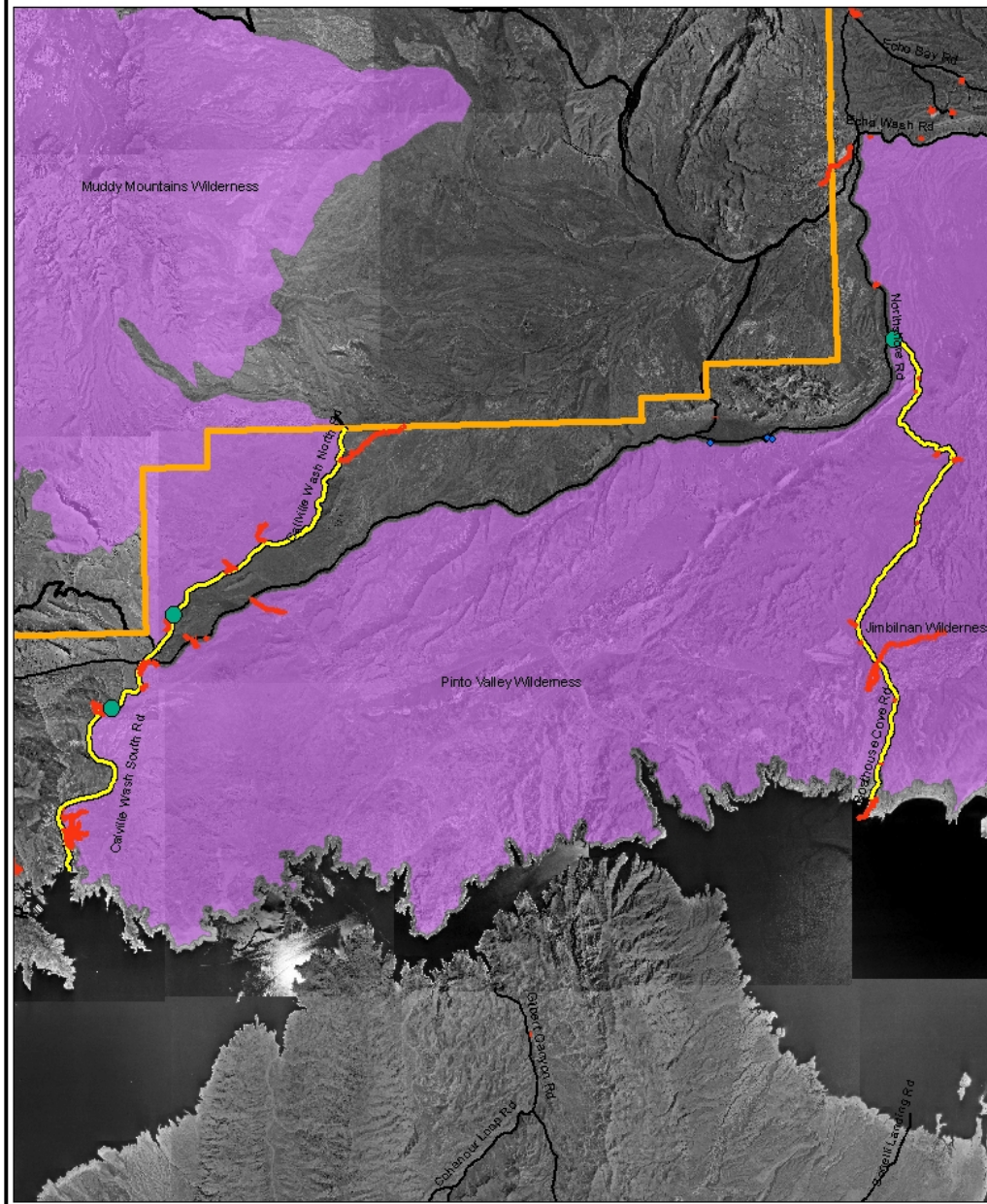


- Traffic Counter
- Disturbance Line
- Approved Road
- ▭ Park Boundary
- Disturbance Point
- ▭ Disturbance Polygon
- ▭ Wilderness



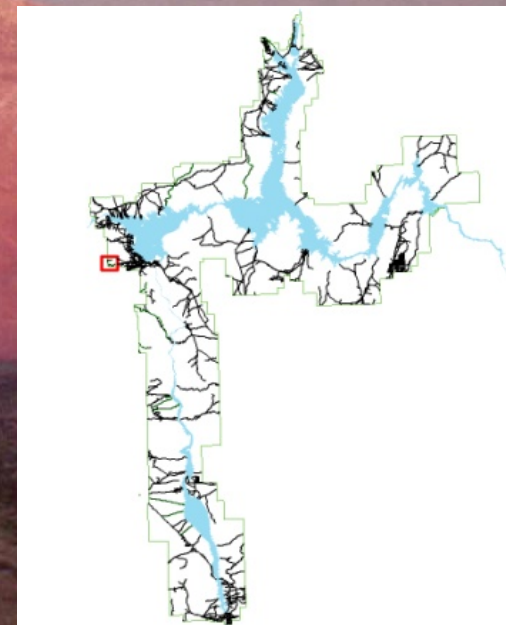
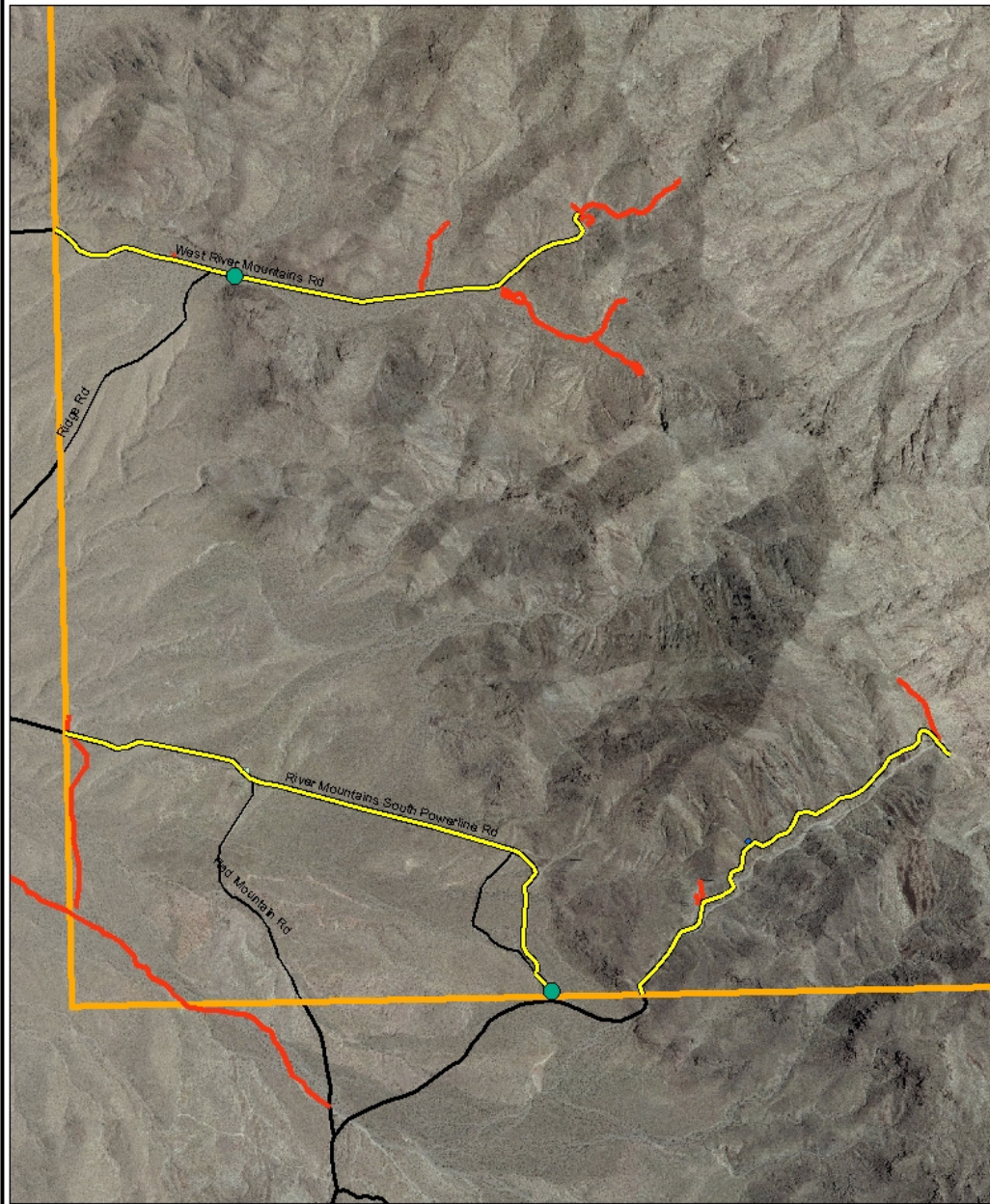
# Callville Bay/ Echo Bay Area

National Park Service  
U.S. Department of the Interior

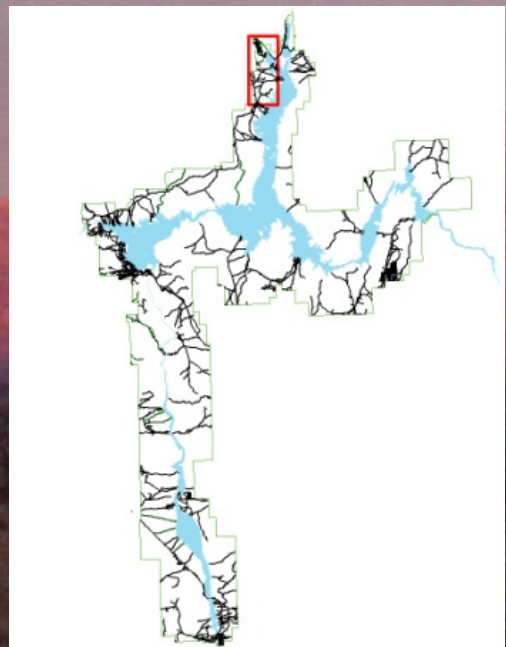


# River Mountains Area

National Park Service  
U.S. Department of the Interior

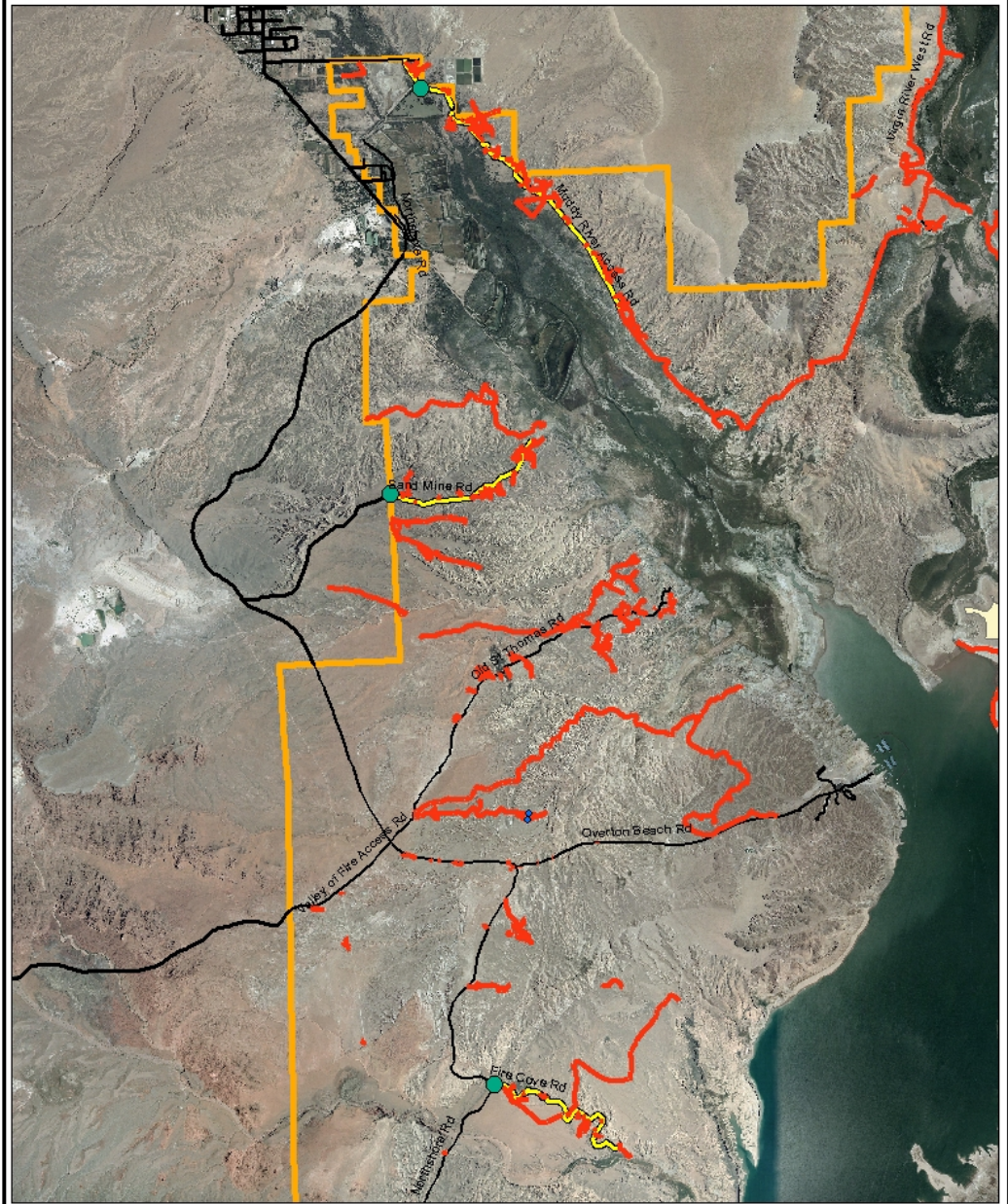


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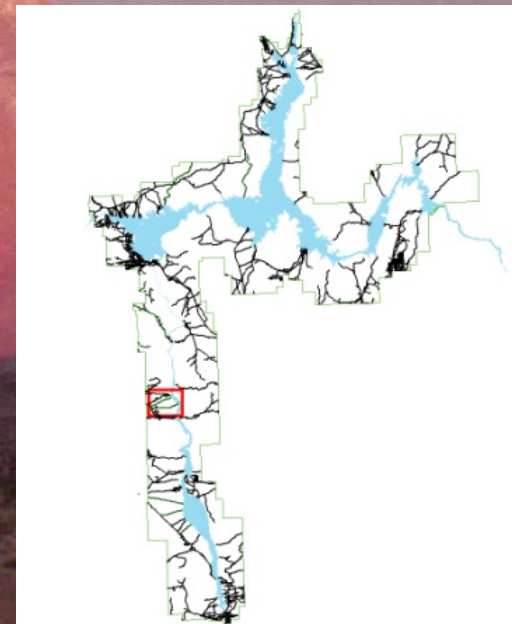
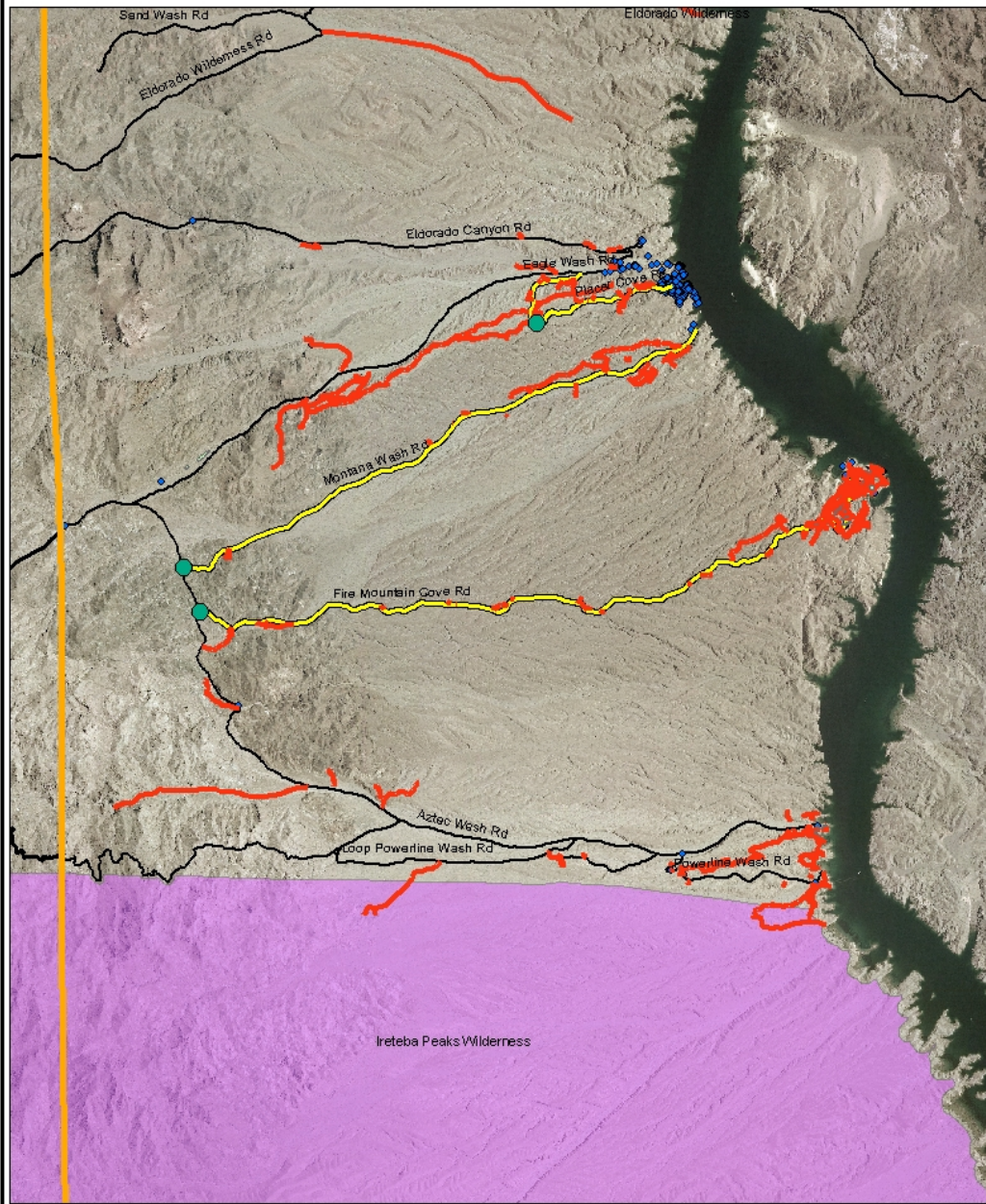
## Overton Beach Area

National Park Service  
U.S. Department of the Interior



# Cottonwood Cove (Nelson) Area

National Park Service  
U.S. Department of the Interior



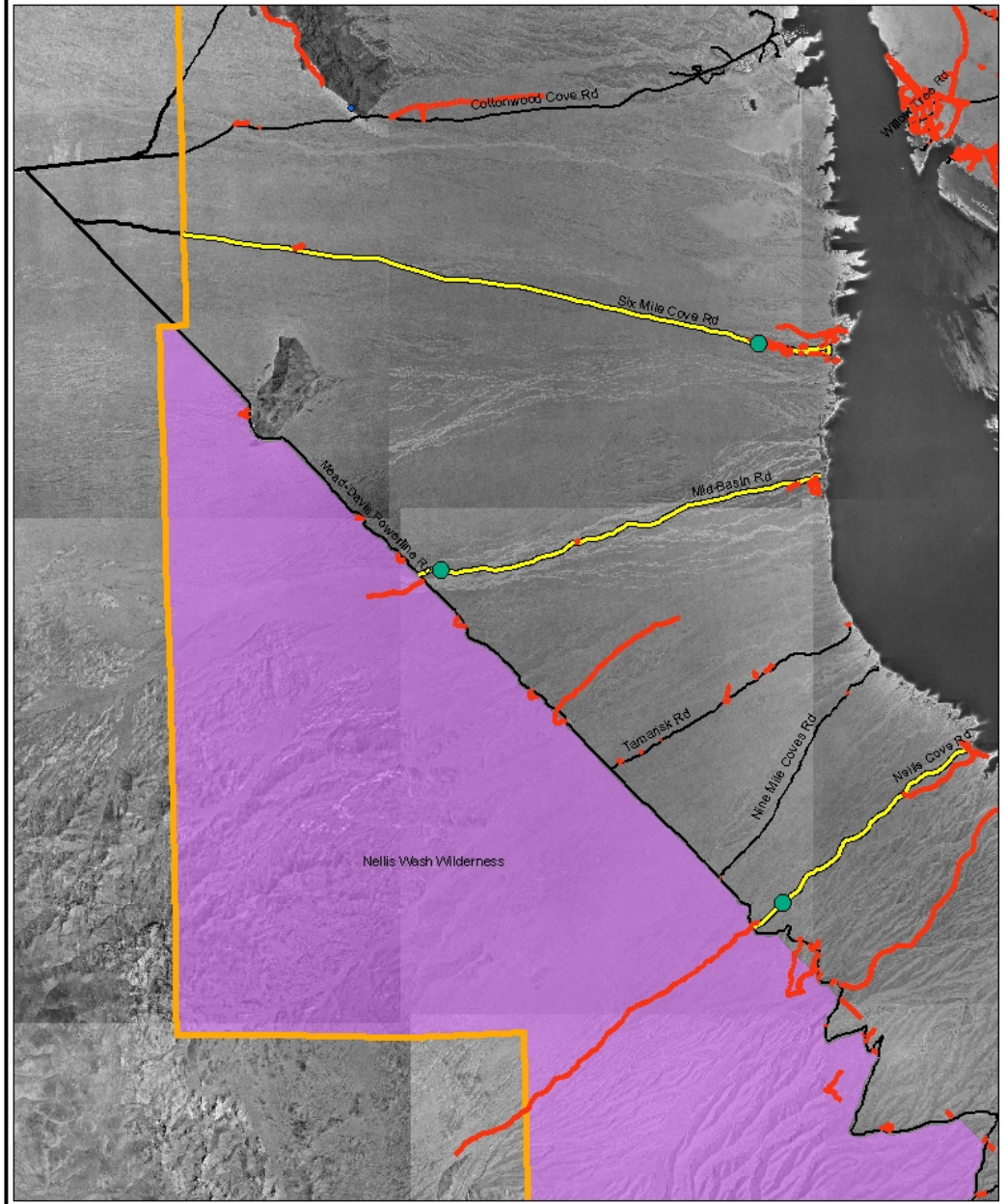
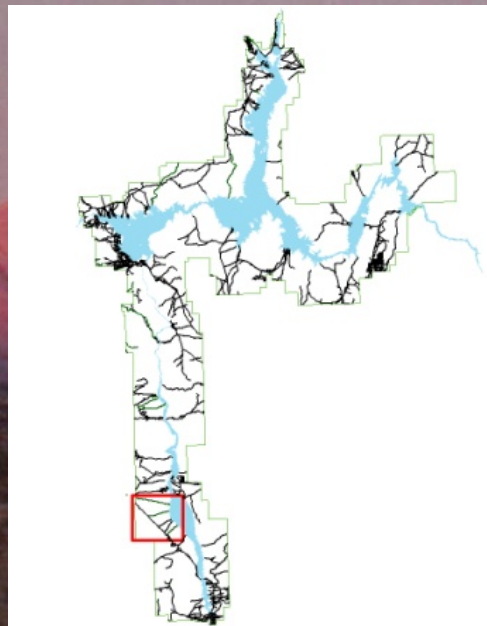


# Cottonwood Cove Area

National Park Service  
U.S. Department of the Interior

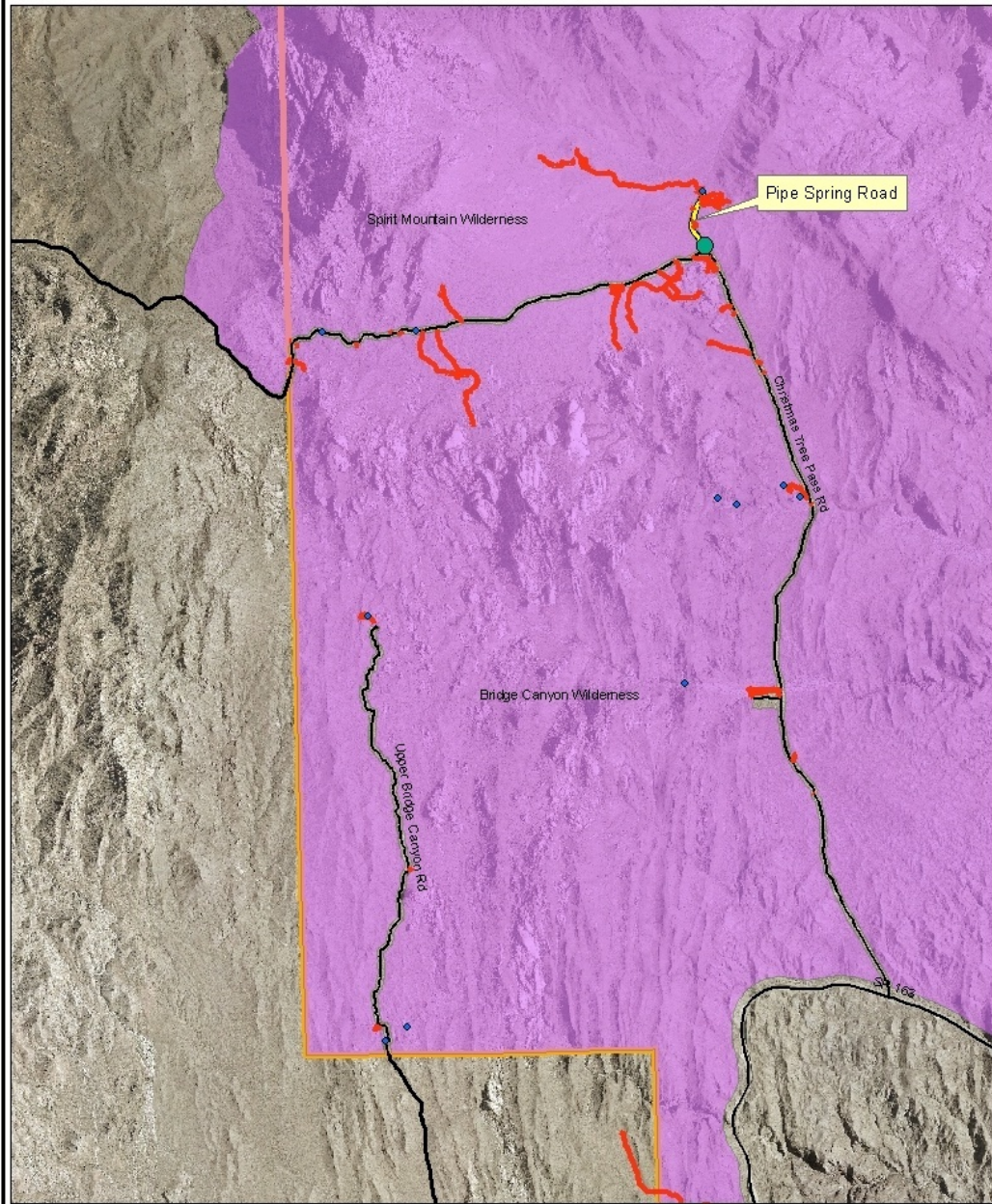


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- Disturbance Polygon
- Wilderness



# Katherine (Christmas Tree Pass) Area

National Park Service  
U.S. Department of the Interior



- Traffic Counter
- Disturbance Line
- Approved Road
- ▭ Park Boundary
- Disturbance Point
- ▭ Disturbance Polygon
- ▭ Wilderness



# Challenges

- Traffic Counter Problems
- Weather Conditions
- Road Conditions



# Trends

- Different areas of the park are used during different times of the year
  - Road that go to the water are used in the summer
  - Roads that are more challenging are used in the winter and spring

# Trends

- Different types of disturbances occur at different times of the year
  - Graffiti incidents are higher in the summer
  - Illegal ORV incidents are higher in the winter and spring

# Future

- Collect data in certain areas
- Restore disturbances as soon as possible
- Enforcement – when and where to focus resources
  - Regular patrols in high risk areas
  - Saturation patrols at high risk times

# Contacts

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