

# MSHCP Amendment: Developer Focus Group Avoidance and Minimization Measures

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## Avoidance and Minimization Measures (AMMs)

- **Project Design Measures:** reduce indirect effects to species and as a result of project implementation. These measures are intended to limit edge effects in adjacent habitats and provide corridors for species movements with buffers from sensitive habitats.
- **General Construction Measures:** reduce direct impacts to species during project implementation.
- **Species Specific Measures:** Additional avoidance and minimization measures for Covered Species will be implemented when disturbance-related project activities (construction or maintenance) are conducted in areas designated as potential to be occupied by the species.

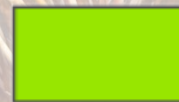
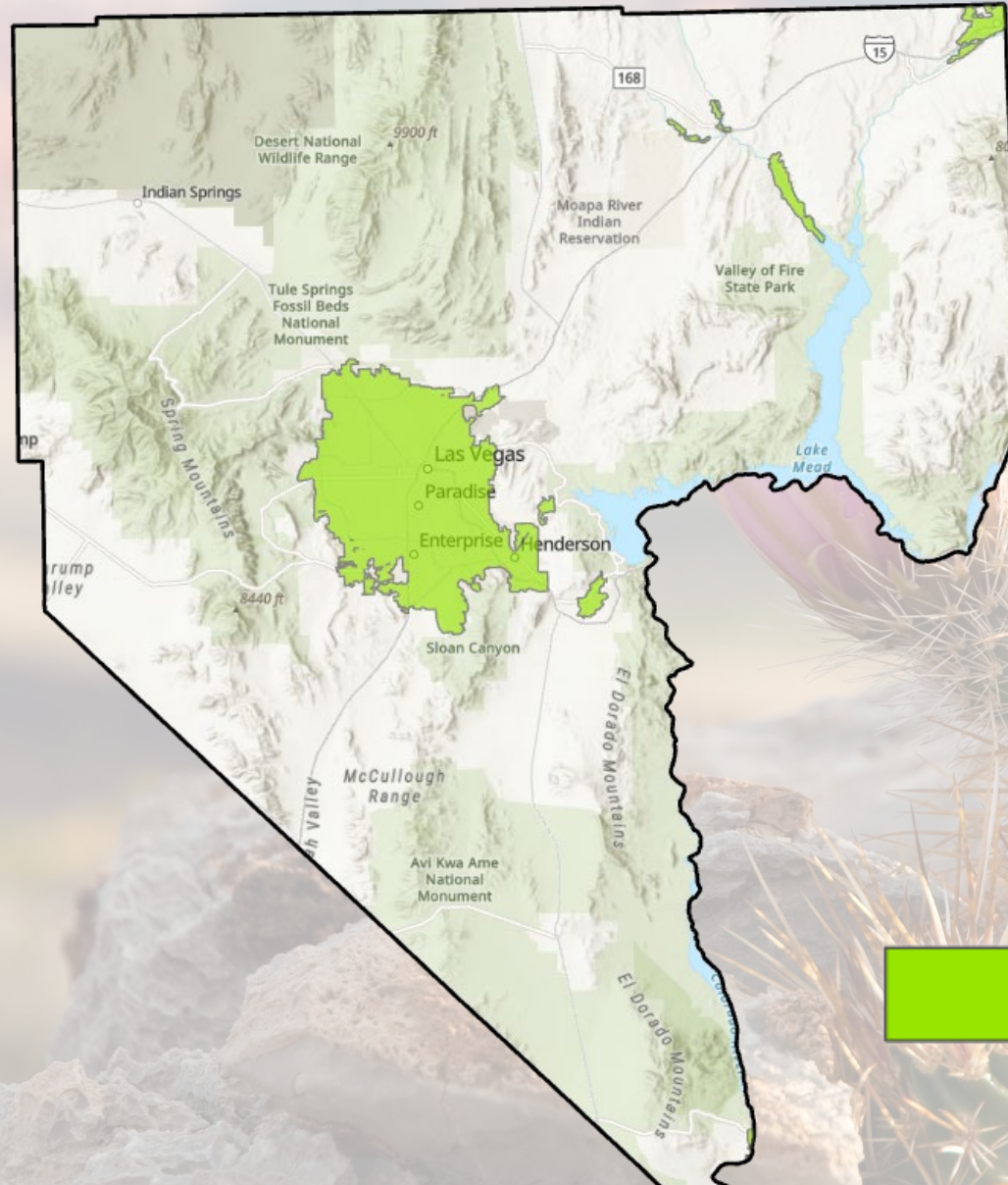
# ZONE A AND ZONE B



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Zone A Boundary

# PROJECT DESIGN MEASURES



**PDM-1.** Urban-Wildland Interface Development Standards – Measures intended to limit edge effects in adjacent habitats, provide corridors for species movements, and buffer impacts to sensitive habitats.

- Fence installation along the urban-wildland boundary
- Signage along recreational trails, to indicate sensitive habitat, and to indicate dumping/unauthorized access are prohibited
- Design outdoor lighting adjacent to undeveloped land to minimize light pollution

# PROJECT DESIGN MEASURES



## PDM-1. Urban-Wildland Interface Development Standards

- In areas adjacent to conservation lands:
  - Reduce shared boundary
  - Use native/drought tolerant species for restoration/landscaping
  - Roads do not terminate at boundary
  - Restrictions on placement of roads adjacent to conservation lands
  - Construct permanent tortoise-proof barriers on boundary
  - Signage to indicate sensitive habitat and prohibit unauthorized access
  - Drainage specifications to protect conservation lands
  - Additional specifications for outdoor lighting

# PROJECT DESIGN MEASURES



## PDM-2: Road structure design

- Design standards for new roads that traverse undeveloped habitat to reduce potential for injury or mortality of animals (e.g., fencing, culverts)

## PDM-3: Utilities

- Within lands designated for conservation or within 1,000 feet:
  - Conform to Avian Powerline Interaction Committee (APLIC) design standards
  - Install anti-perching devices

# GENERAL CONSTRUCTION MEASURES



## **GCM-1:** Confine and delineate the work area

- Additional info will be added to the Dust Control permit sign (site map, measures for encountered tortoises)
- Travel routes within undisturbed habitat will be established and clearly marked

## **GCM-2:** Conduct worker education

- Increase awareness of covered species
- Inform workers of on-site requirements that minimize impacts
- Protocols for when a covered species is discovered on a project site
- Reporting injury or death of covered species

# GENERAL CONSTRUCTION MEASURES



## **GCM-3:** Measures to avoid wildlife entrapment

- Cover holes and trenches more than 1-foot deep (within Zone B)

## **GCM-4:** Measures to control erosion and fugitive dust

- Implement requirements specified by SWPPP, dust control permits, or other NDEP or NPDES permits

## **GCM-5:** Weed management

- Implement best management practices to minimize potential to introduce weeds



# GENERAL CONSTRUCTION MEASURES



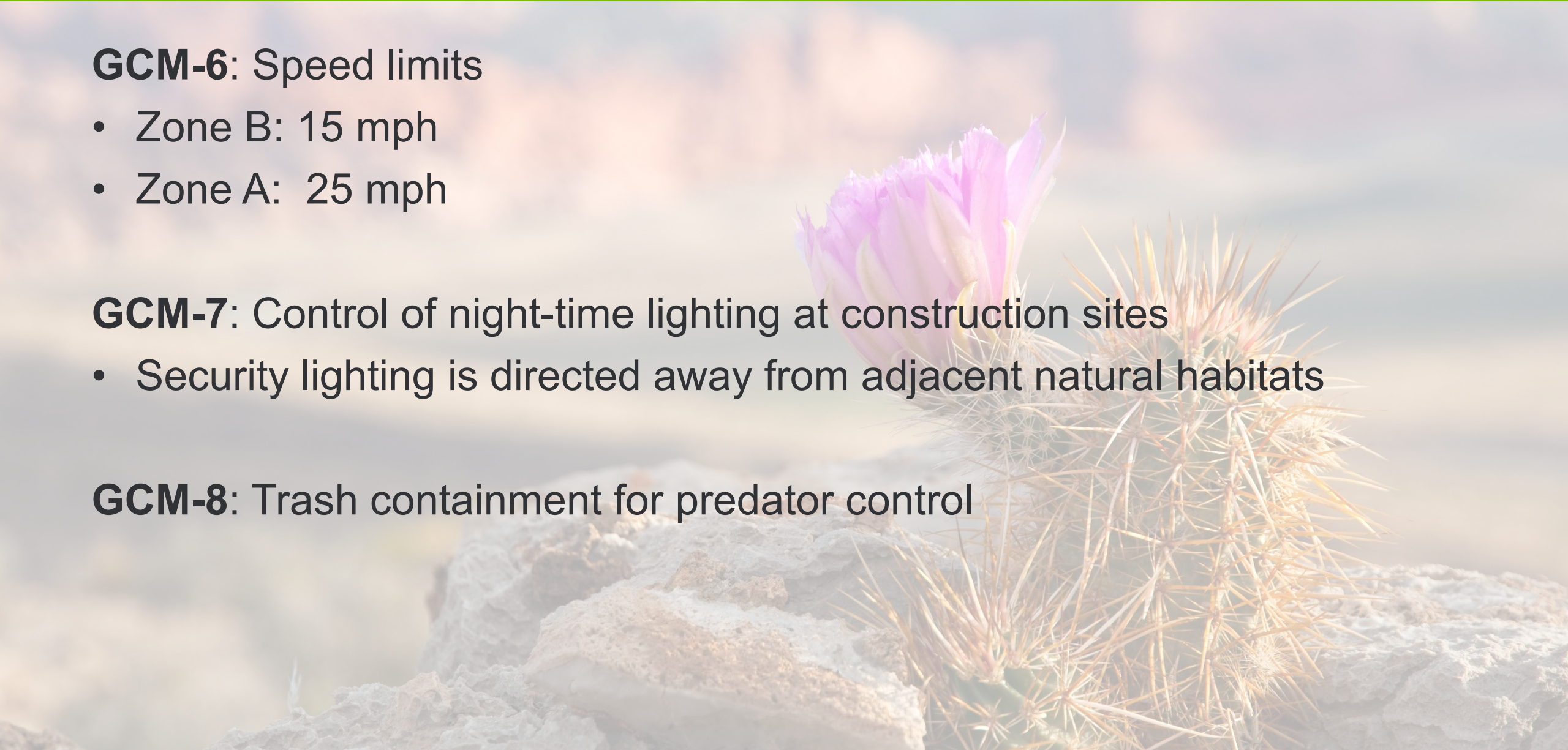
## **GCM-6:** Speed limits

- Zone B: 15 mph
- Zone A: 25 mph

## **GCM-7:** Control of night-time lighting at construction sites

- Security lighting is directed away from adjacent natural habitats

## **GCM-8:** Trash containment for predator control



# GENERAL CONSTRUCTION MEASURES



**GCM-9:** Clean-up of construction sites following construction following completion of activities in an area

**GCM-10:** Requirement to report observations of desert tortoise, Gila monster, or burrowing owl to the Desert Conservation Program



# SPECIES SPECIFIC MEASURES



## Plant Species – Outside Reserve System

**PLANT-1:** Seed collection from Covered plant species in Zone A

- In Zone A: 100% of mature seed to be collected
- DCP will be notified upon submittal of project plans to Permittees, or collection can occur prior to BLM disposal
- Requirements would be built as a layer in Open Door

**PLANT-2:** Seed collection from plant Covered Species in Zone B

- DCP will coordinate with BLM to collect seed prior to disposal

# SPECIES SPECIFIC MEASURES



## Plant Species – Within Reserve System

### PLANT-3:

- Baseline monitoring of vegetation prior to disturbance
- Photo point monitoring to establish pre- and post-construction conditions

### PLANT-4: Covered plant species surveys

- Required if within 25 feet of known, or modeled habitat

### PLANT-5: If necessary, map Covered Plant species avoidance areas

### PLANT-6: Project crews shall have a copy of site surveys maps at all times

## Plant Species – Within Reserve System

**PLANT-7:** Establish avoidance areas for Covered plant species documented during surveys.

**PLANT-8:** If avoidance is not feasible:

- Collect all available mature seed
- For locations with minor disturbance, reseed following disturbance
- For locations with more disturbance, vertical mulch scraping and salvage and soil layer salvage prior to disturbance, restoration following disturbance

## Desert Tortoise Measures – Within Zone B

**DT-1:** Clearance surveys using modified USFWS protocol; construction workers must follow protocols for any tortoises encountered

**DT-2:** Temporary exclusion fencing

**DT-3:** Temporary fence specifications

**DT-4:** Temporary fence maintenance

**DT-5:** Post-fence installation survey



## Desert Tortoise Measures – Within Zone B

**DT-6:** Burrows cleared of tortoises and eggs; burrows that can be avoided shall be clearly marked

**DT-7:** Requirement to inspect under vehicles before moving them

### Gila Monster

Temporarily cease activities in the vicinity and contact DCP and NDOW when a Gila monster is discovered on a construction site.

# SPECIES SPECIFIC MEASURES



## Riparian Birds - Within riparian habitats or within 100 feet of riparian habitat

**RB-1:** Avoid construction activities during the breeding season for Ridgway's rail, AZ Bell's vireo, southwestern willow flycatcher, yellow-billed cuckoo

**RB-2:** During emergency maintenance, notify DCP to conduct surveys for nesting species

**RB-3:** Avoid known nesting areas of Ridgway's rail, southwestern willow flycatcher, and yellow-billed cuckoo year-long

**RB-4:** Fence/demarcate any avoidance areas prior to mass grading

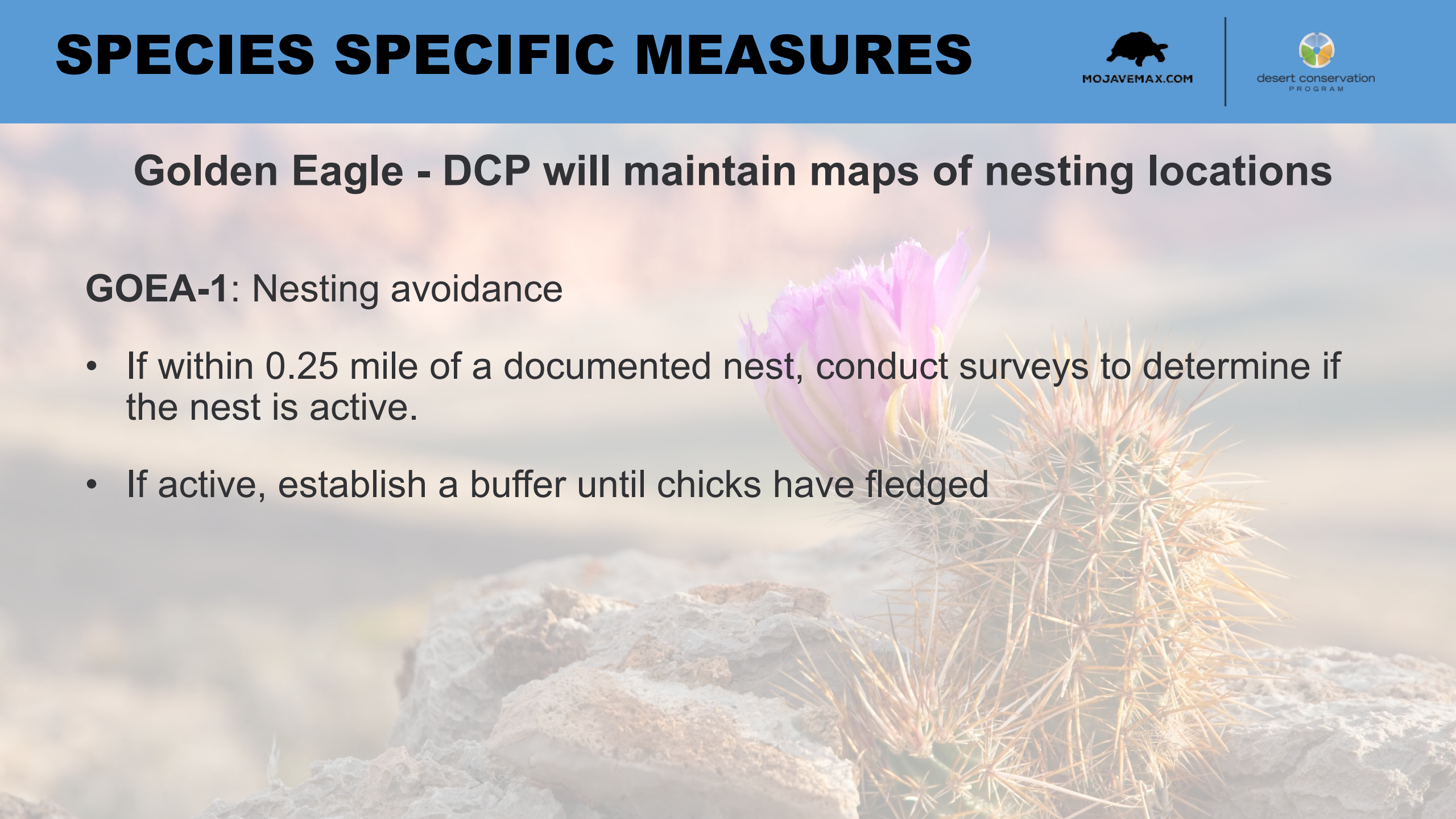
**RB-5:** BMPs to avoid and minimize erosion, pollution, and sedimentation



## Golden Eagle - DCP will maintain maps of nesting locations

### GOEA-1: Nesting avoidance

- If within 0.25 mile of a documented nest, conduct surveys to determine if the nest is active.
- If active, establish a buffer until chicks have fledged



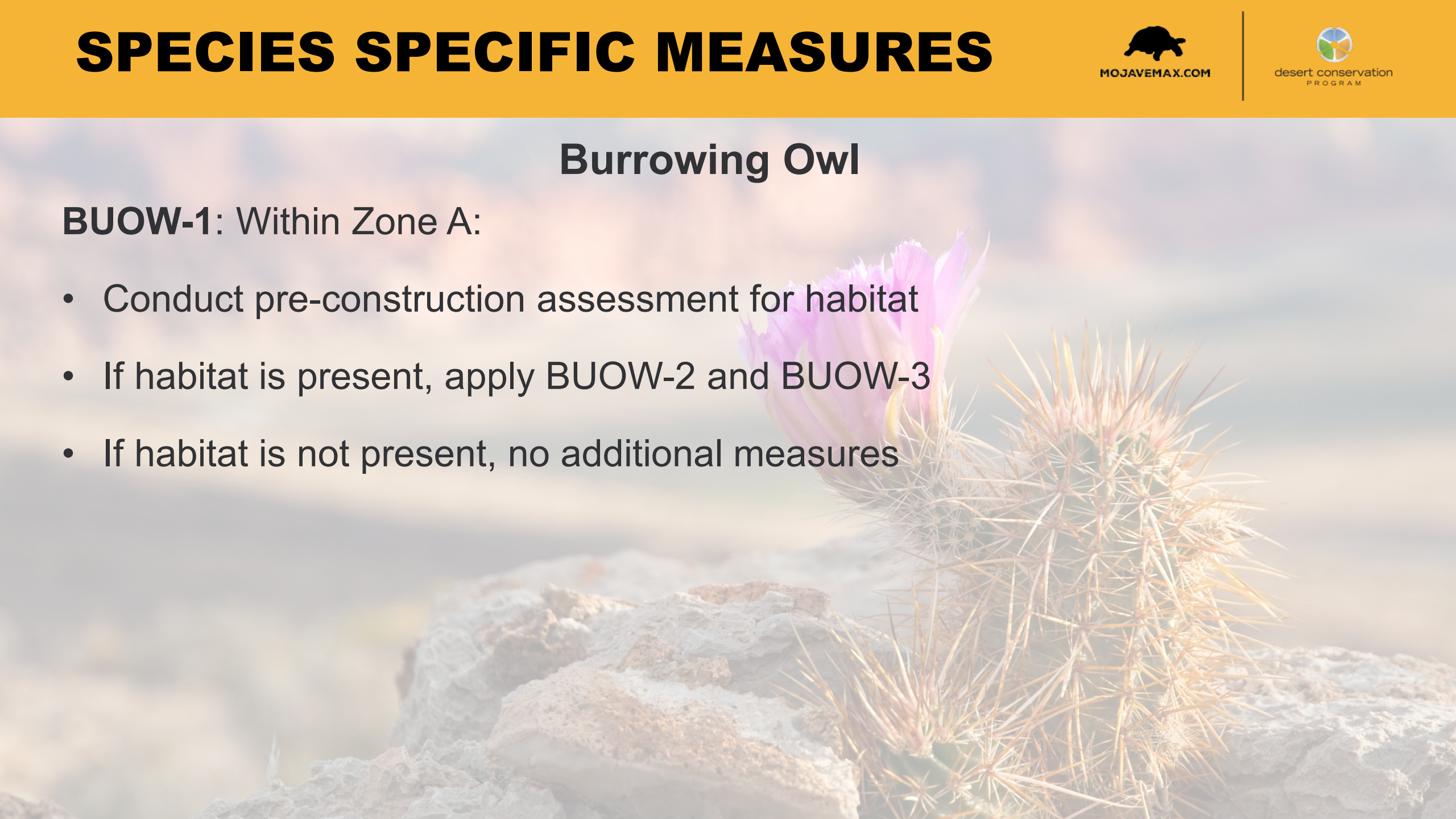
# SPECIES SPECIFIC MEASURES



## Burrowing Owl

### BUOW-1: Within Zone A:

- Conduct pre-construction assessment for habitat
- If habitat is present, apply BUOW-2 and BUOW-3
- If habitat is not present, no additional measures



# SPECIES SPECIFIC MEASURES



## Burrowing Owl

**BUOW-2:** Within Zone B and Zone A areas identified as habitat:

- During the breeding season, conduct pre-construction surveys concurrent with desert tortoise surveys
- Occupied burrows will be avoided until nesting status is determined
- If breeding is confirmed, establish an avoidance buffer around the nest until chicks have fledged.

**BUOW-3:** Rodent control will only be allowed in developed portions of a Covered Activity project site within owl habitat.

# SPECIES SPECIFIC MEASURES



## Bats

**BAT-1:** In areas modeled as roost habitat:

- Pre-construction survey to determine if roosts are present
- If a maternity or winter roost site is present, follow up surveys may be required to determine occupancy
- If occupied, Covered Activities will not occur during the maternity or hibernation periods, or until bats can be safely evicted.

**BAT-2:** Eviction methods may be used outside the maternity or hibernation seasons; requires a bat eviction plan

Raise awareness of required Avoidance and Minimization Measures (AMMs)

## Developer Outreach

- Inform developers about requirements related to:
  - Desert tortoise clearances
  - Other Covered Species measures
  - Riparian construction seasonal restrictions
  - Urban-wildland design guidelines

## Wild Desert Tortoise Outreach

- Inform citizens on what to do when they encounter tortoises in the wild
- Raise awareness of Covered Species issues
- Post educational material and signage in the Reserve System