

MSHCP Amendment: Agency Focus Group Avoidance and Minimization Measures

Kimberley Goodwin
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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.

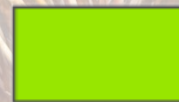
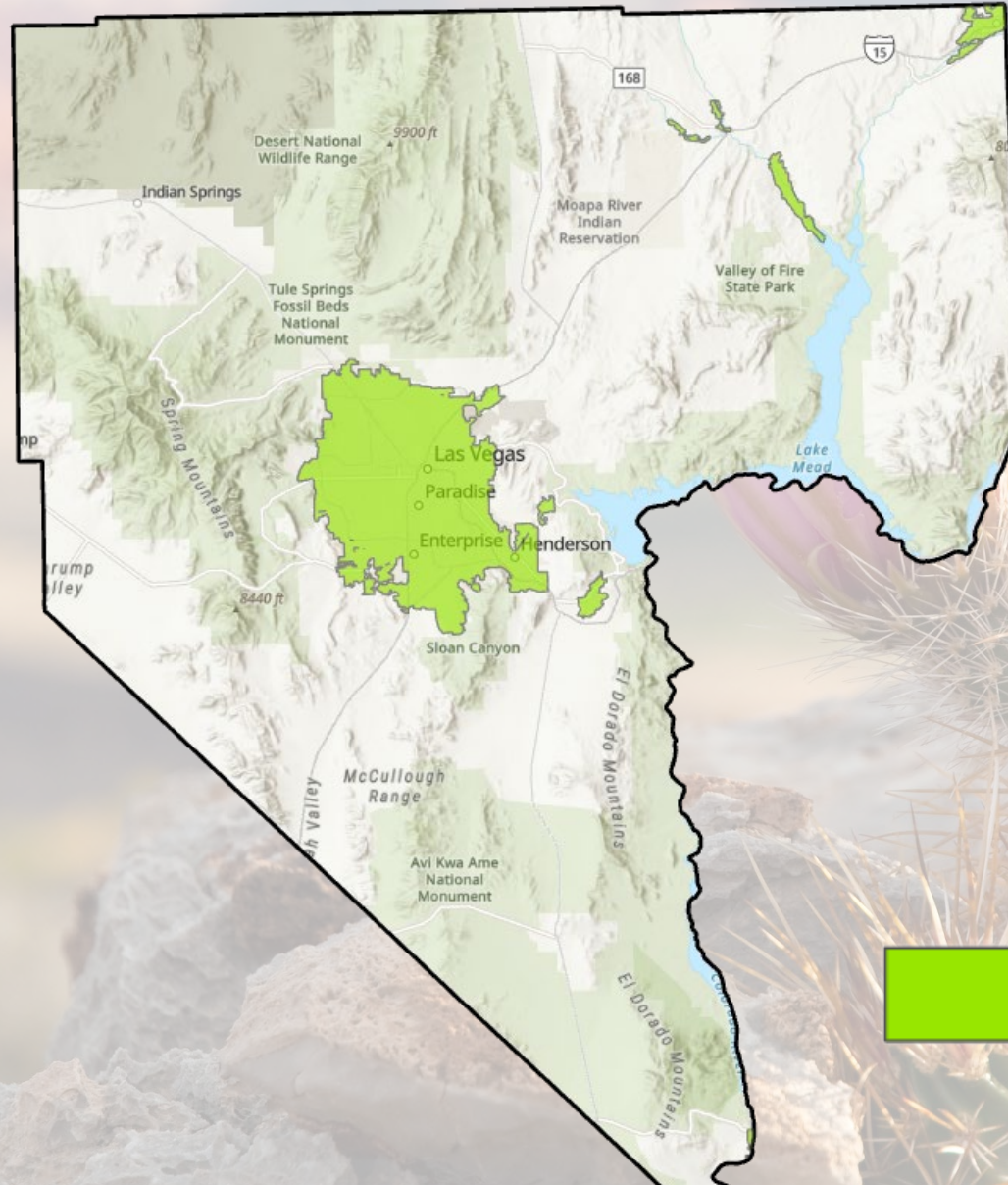
ZONE A AND ZONE B



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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



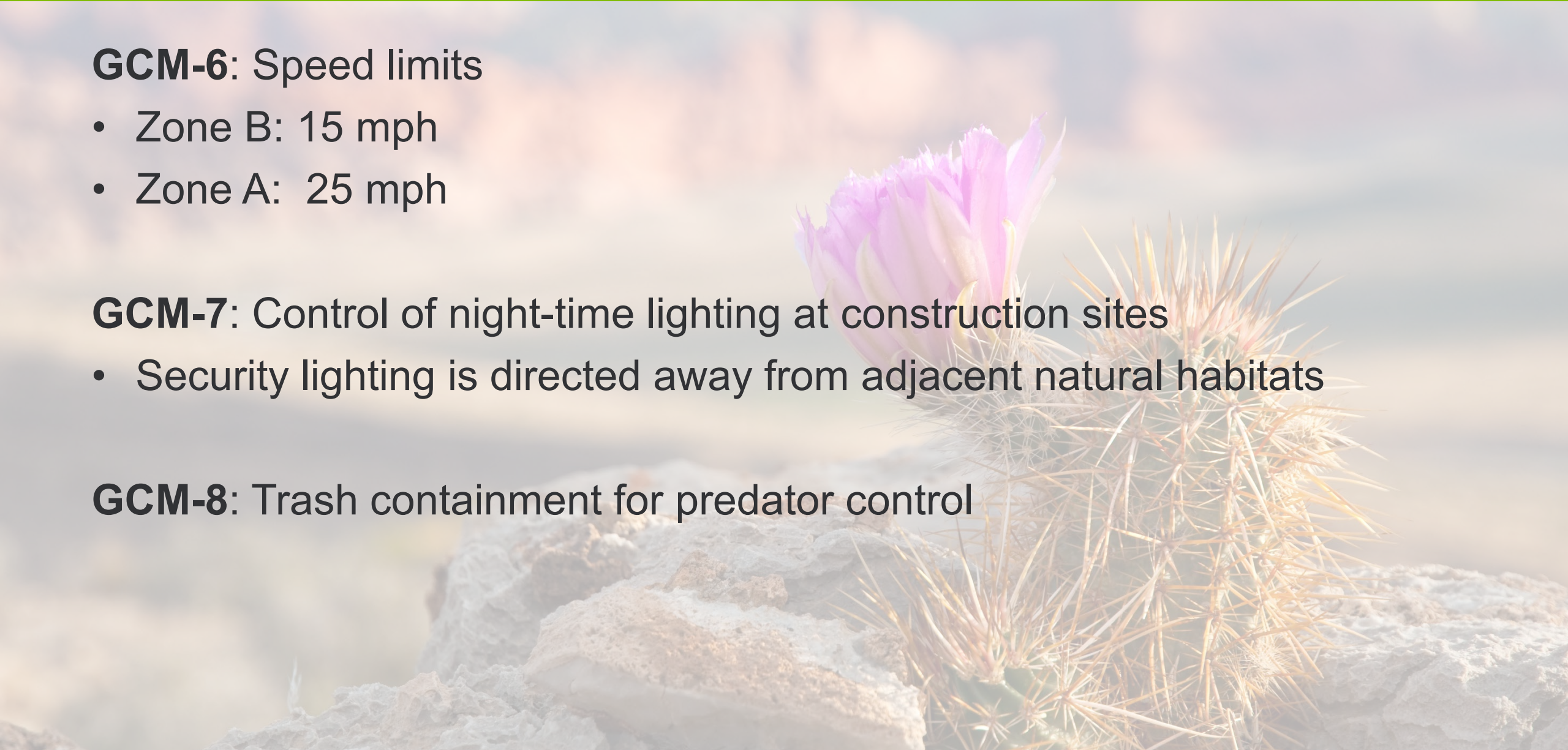
GCM-6: Speed limits

- 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



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

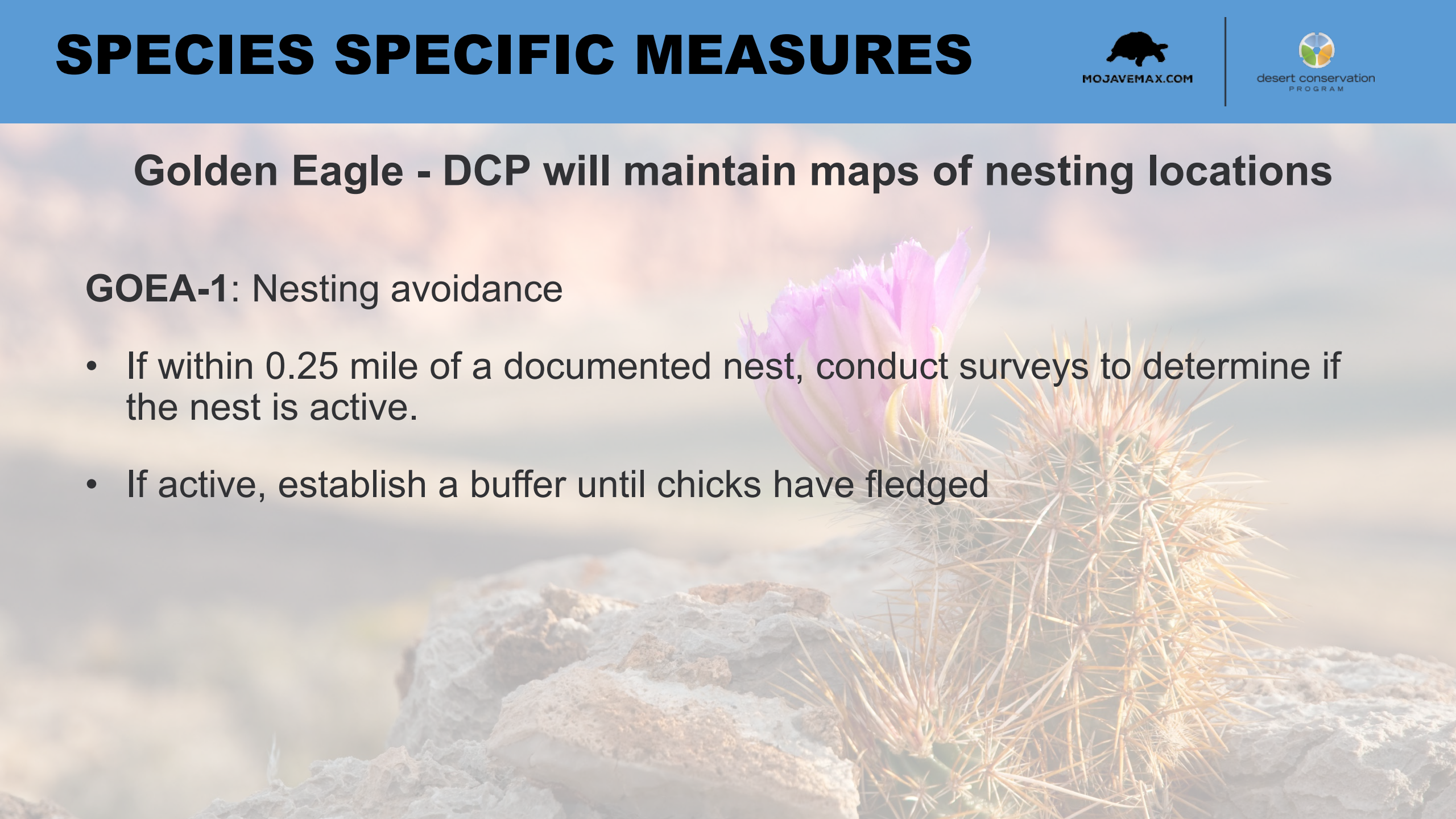
RB-4: Fence/demarcate any avoidance areas prior to mass grading

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



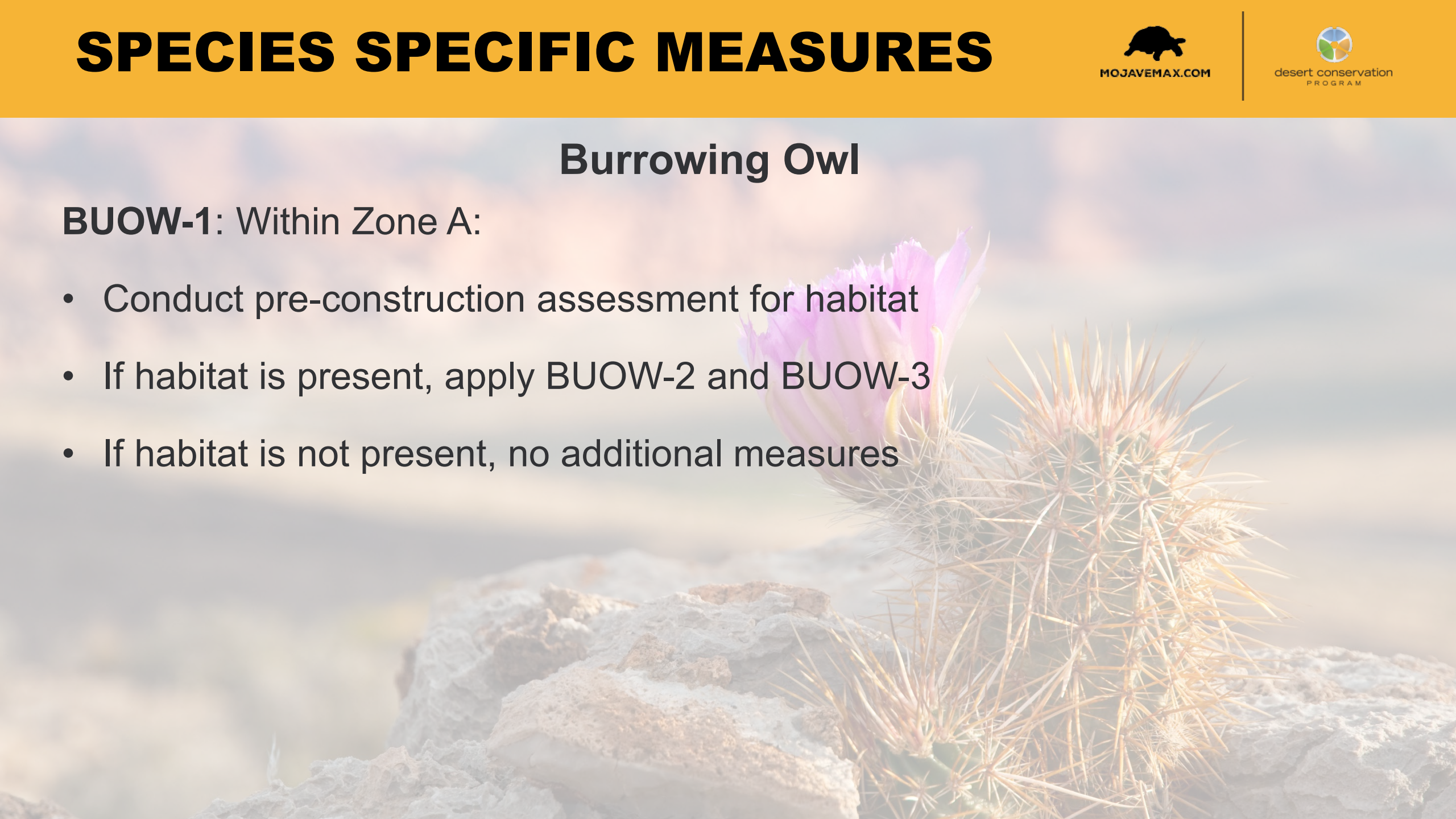
SPECIES SPECIFIC MEASURES



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