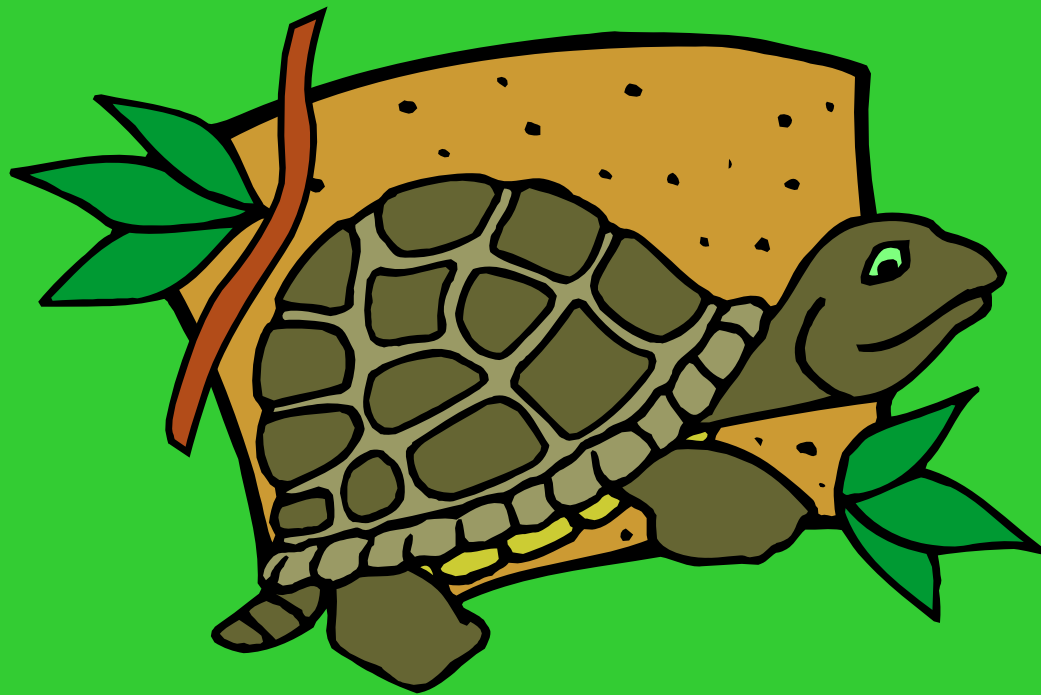


BIOLOGICAL ASSESSMENT
APPENDIX C
DESERT TORTOISE BRIEF
(POWER POINT PRESENTATION)

Mojave Desert Tortoise

Quarry Activities



The Basics

Gopherus agassizii

Vital Stats

Weight: 8-15 lbs.

Length (carapace): 9-15"

Height: 4- 6"

Sexual Maturity: 15-20 years

Mating Season: Aug.-Oct.

Incubation Period: 90-120 days

No. Of Eggs: 4-8

Birth Interval: 2-3/year

Lifespan: 80-100 years

Typical diet: Herbs, grasses,
wildflowers



Interesting Facts



- The desert tortoise is able to live where ground temperature may exceed 140 degrees F.
- 95% of a desert tortoise's life is spent in underground burrows
- Ravens have caused more than 50 percent of juvenile desert tortoise deaths in some areas of the Mojave Desert.
- Adult desert tortoises may survive a year or more without access to water.
- Desert tortoise populations have declined by 90 percent since the 1980s
- Ravens are now one of the desert tortoise's primary predators.
- Much of the desert tortoise's water intake comes from moisture in the grasses and wildflowers they consume in the spring.

The Mojave population of the desert tortoise
(*Gopherus agassizii*) was listed as

THREATENED

under the Federal Endangered Species Act (ESA),
effective April 2, 1990.

Critical habitat was designated for the Mojave population on
February 24, 1994.





It is

AGAINST

FEDERAL LAW

to

touch, harm, harass,

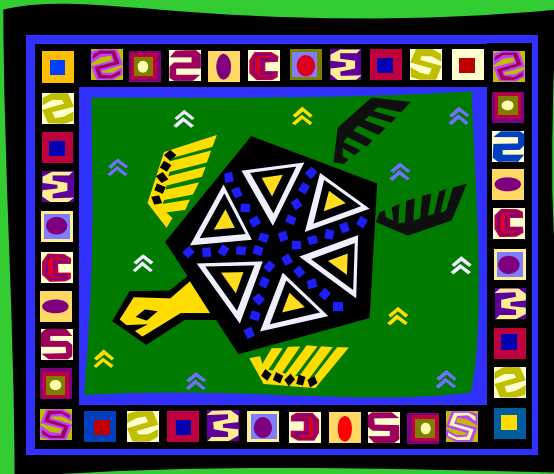
collect or transport

a wild desert tortoise!!



In the State of Arizona,
Commission Order 43
prohibits
“taking”
desert tortoises from the wild.

Remember that ‘take’ is a legal term.



The State of California lists
the desert tortoise as
THREATENED
under the *state* ESA.



Penalties



Federal ESA

- CIVIL PENALTIES:
 - “knowingly violates”
 - “not more than \$25,000 for each violation”
- CRIMINAL VIOLATION:
 - “knowingly violates”
 - “not more than \$50,000” **or**
 - “imprisoned for not more than one year”
 - **OR BOTH!!**



Penalties

California ESA



- a fine of not more than five thousand dollars (\$5,000),
- **or** imprisonment in the county jail for not more than one year,

....OR BOTH!!

Habitat

- desert flats
- rocky terrain
- **alluvial fans:** a fan shaped deposit formed where a fast flowing stream flattens, slows and spreads, typically at the exit of a canyon onto a flatter plain
- **bajadas:** a convergence of neighboring alluvial fans into a single apron of deposits against a slope



Habitat, continued

- Desert tortoise may possibly frequent **rocky slopes**, perhaps for protection from heat.
 - Flat terrain lends itself to human survey on foot resulting in **skewed population estimates**.
- Look at **soil friability** (the tendency for soil to break apart) due to the need to burrow.
- Another major indicator: **plant species**.
 - Creosote bush, burrobush, mojave yucca and blackbrush
 - Higher altitudes: joshua tree and galleta grass (*Pleuraphis rigida*)

Habitat, continued

Decreased habitat:

- near highways, roads and other active areas due to high mortality losses and lack of habitat.

Desert tortoise may persist in low densities in suitable habitat areas altered by man.



12 Critical Habitat Units (CHUs) in 4 states:

- Arizona
- California
- Nevada
- Utah



Land management agencies
are also developing large

Desert Wildlife Management Areas (DWMA)
to conserve this and other threatened,
endangered and sensitive species.

Desert Tortoise Distribution

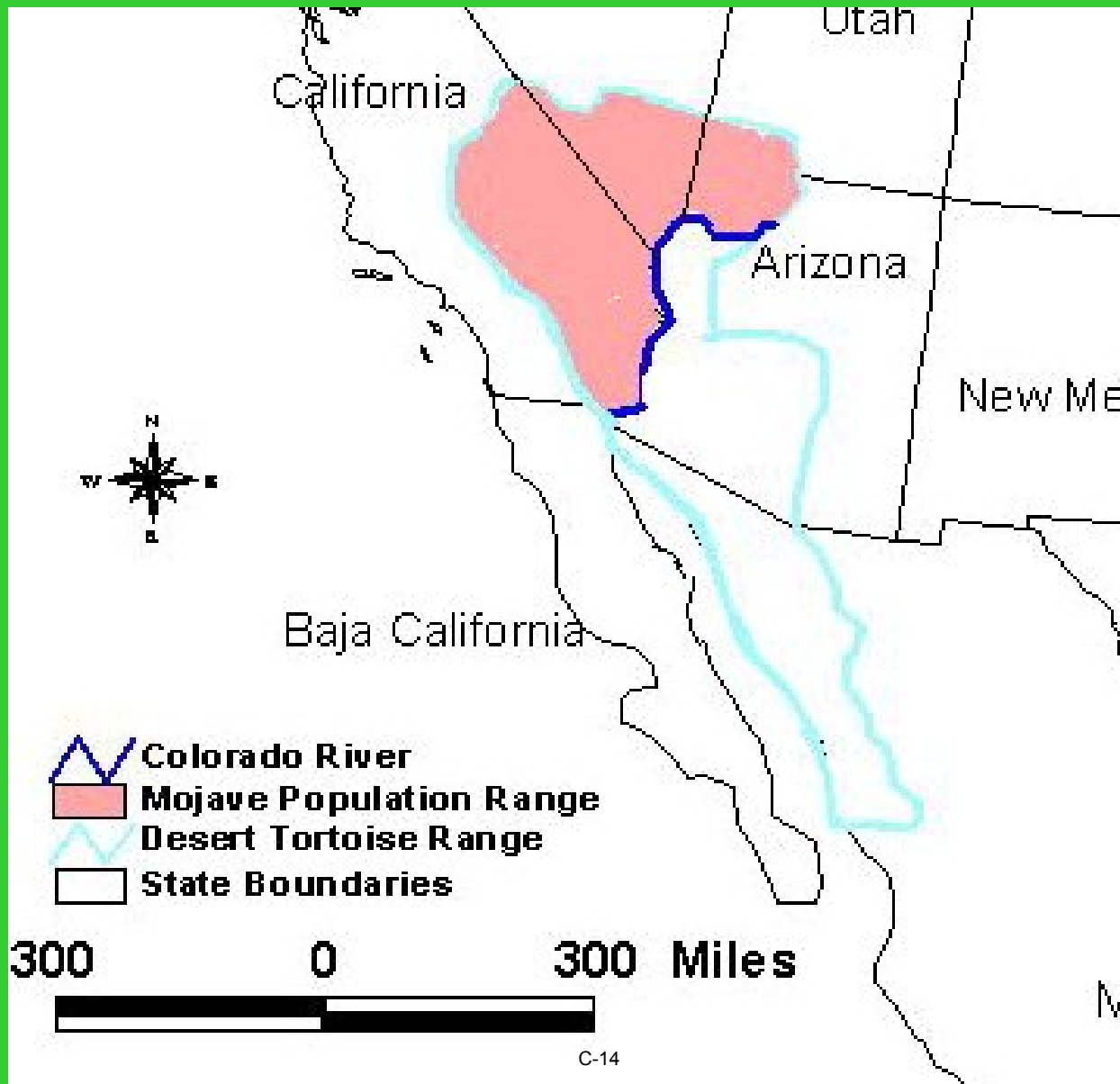


Illustration by Kerrie Bathel.

Diet



Tortoises emerge from their burrows mid-march to feed on **ephemeral plants**.

- Spend roughly six weeks eating fresh green grass and spring wildflowers

Dry stems of grass and cactus pads provide sustenance in dryer times.

Introduced plant species have greatly degraded the existing natural ecosystem. Desert tortoises have, however, adapted to eating **some non-native species**.

Life Span

Life span is well over 50 years.

Delayed maturity (14-20 years)

Reproduction / generation cycle lasts 25 years

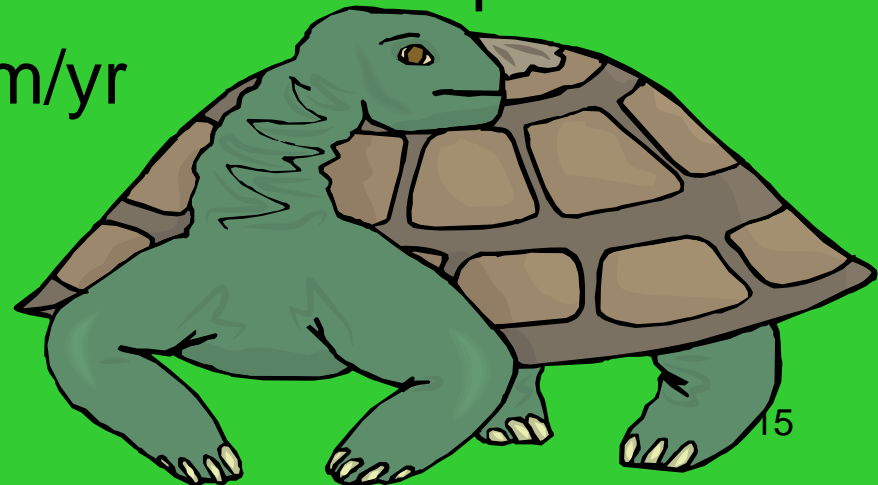
- reproductive potential is low

- lay relatively few eggs (3-14) in each clutch

- high mortality rate (approach 99%) for juveniles as they are particularly vulnerable to predators

- *slow growth of ~ 2.5 cm/yr

- *soft / flexible shells



Adaptations

Elephantine limbs and well-developed claws enable better burrowing

Burrows may be over 3 meters long, to cushion temperature extremes

Eating patterns:

March – October: emerges in morning or late

afternoon to forage.

November – March: most hibernate, emerging only during winter storms to replenish water stores.

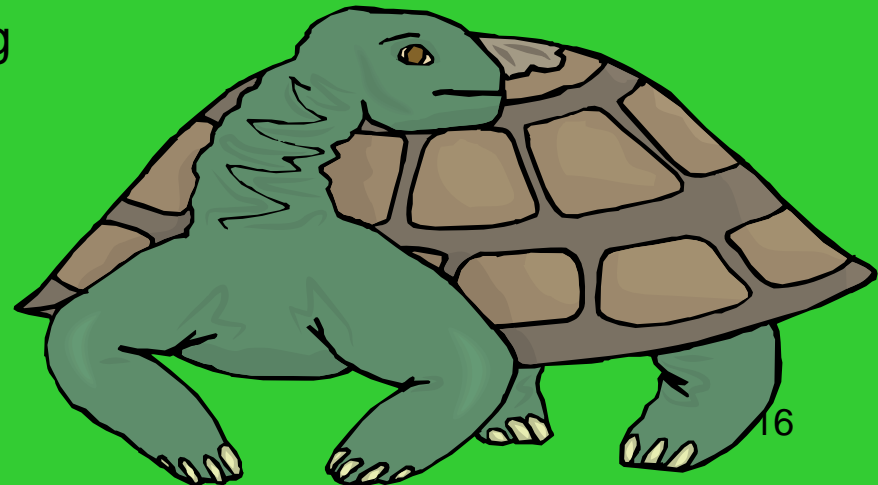
Lack of water:

dig shallow basins in impermeable soil to catch rainwater.

may go for many years without drinking

ingest most of their water from plants

store water in bladder





Population Decline

Top reasons attributable to humans

direct loss of individuals

poaching, collection for pets, military activities,
vehicular impact, livestock trampling

Habitat degradation/fragmentation/loss

urban sprawl and livestock grazing practices
encroachment by ravens and other predators

Predators



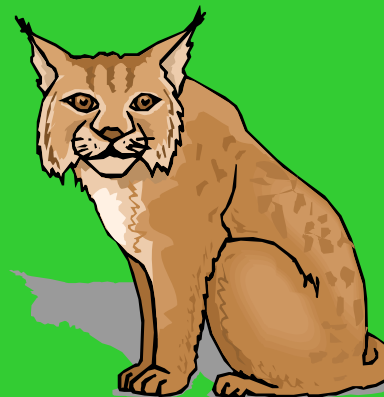
Egg Predators

- Gila Monster
- Kit Fox
- Coyote
- Badger



Juvenile Predators

- Ravens
- Roadrunner
- Some Snakes
- Kit Fox
- Bobcat
- Badger
- Coyote
- Spotted Skunk



Adult Predators

- Kit Fox
- Badger
- Bobcat
- Coyote
- Golden Eagle





Other Threats

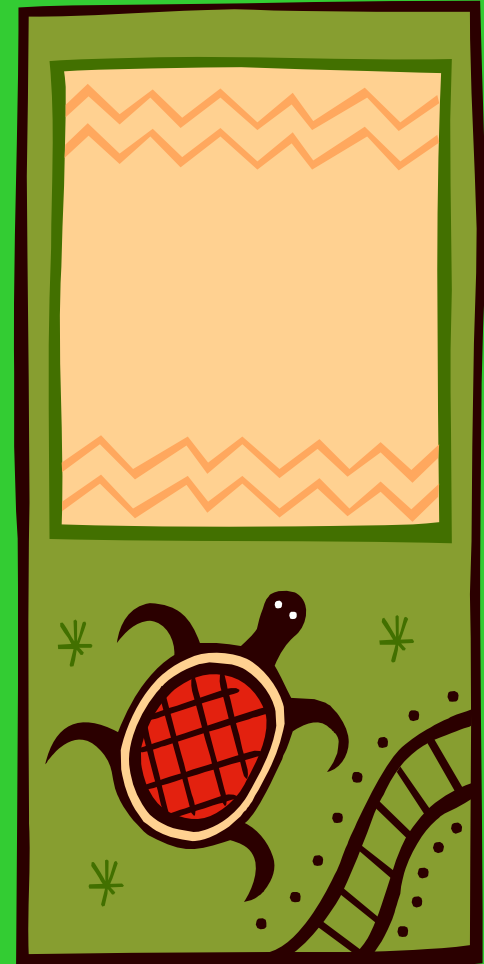


- Agriculture
- Construction Activities
- Disease
- Drought
- Energy and Mineral Development Fire
- Landfills
- Garbage and Litter
- Handling and Deliberate Manipulation of Tortoises
- Invasive Plants
- Livestock Grazing
- Military Operations
- ORV Activities
- Subsidized Predators
- Noise and Vibration
- Non-ORV Recreation
- Roads, Highways, and Railroads
- Utility Corridors
- Vandalism
- Wild Horses and Burros
- Human Access to Tortoise Habitat

SHOCKING!

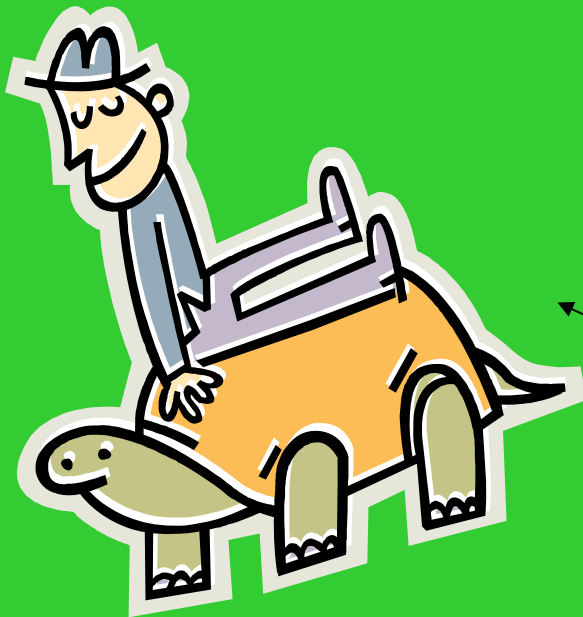
In California's western
Mojave desert,
populations
may have declined
nearly 90% since 1940
as much as 70% locally
between 1976-1984

*(Berry 1984; however,
see Bury and Corn 1995)*

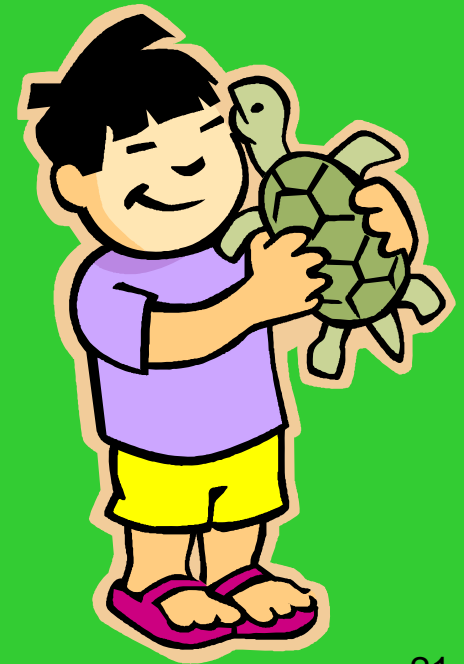


REMINDER

It is unlawful to touch, harm, harass or collect a wild desert tortoise in either California or Arizona.



NO-NOs



Quarry Construction Work

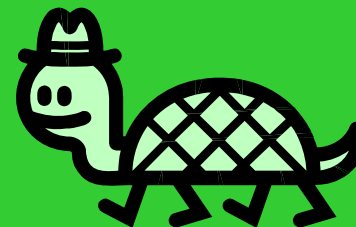
What you can do to prevent take of desert tortoise...

- Always check under every vehicle before moving - *every time!*
- Pay attention while driving
- Obey all speed limits (<25 mph in tortoise habitat)
- Pick up your trash -- trash brings predators
- Don't leave open pits/ trenches that a tortoise might fall into



Mitigation Measures

- A field contact representative (FCR) will be designated.
- The FCR will be responsible for:
 - **overseeing compliance** with these protective measures, and
 - **coordinating compliance** with the BLM.
- The FCR:
 - must be **on-site** during all project activities;
 - has the **authority to halt all project activities** that are in violation of the stipulations;
 - shall possess a **copy of all stipulations** when work is being conducted on the site; and
 - may be a crew chief or field supervisor, a project manager, any other employee of the BOR or BLM.

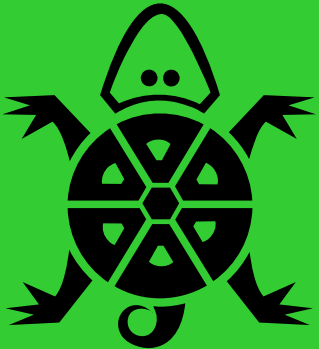
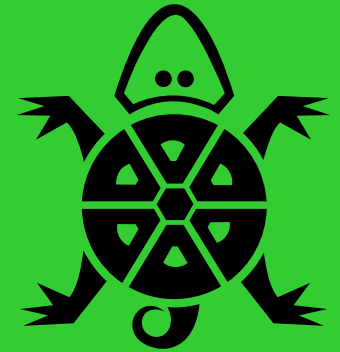


Titles

🌐 FCR:

🌐 Authorized Biologist:

🌐 Biological Monitor:



Mitigation Measures

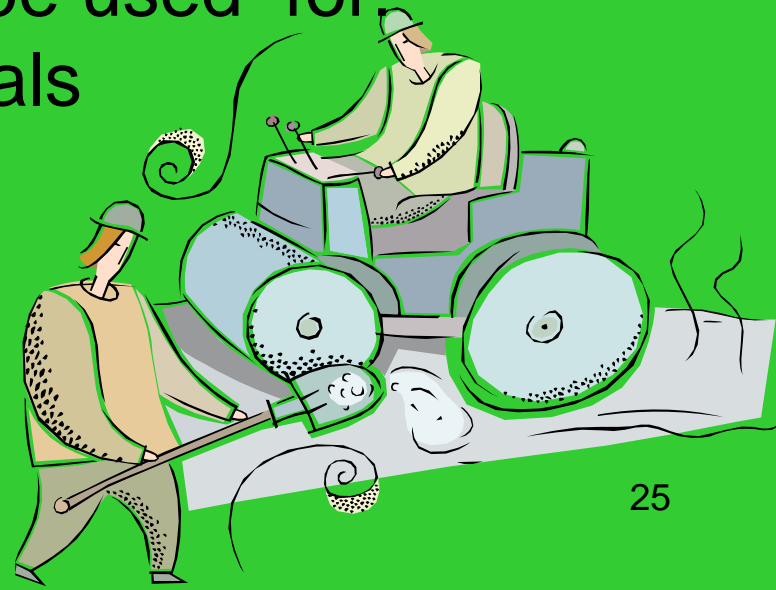
Desert tortoise **education program** for all on-site workers prior to working on-site.

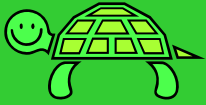
Wallet sized cards or a one-page handout with important information for workers will be provided.

Special habitat features, as identified by the Authorized Biologist or Biological Monitor, will be avoided to the extent possible.

Previously disturbed areas will be used for:

- stockpiling excavated materials
- storing equipment
- locating office trailers
- parking vehicles





Mitigation Measures



Work area confined to the smallest practical area:

- topography
- placement of existing facilities
- existence/location of burrows
- public health and safety
- other limiting factors

Work area boundaries delineated with flagging or other marking to minimize surface disturbance associated with vehicle straying.

No dogs will be allowed in the work area.



Mitigation Measures

The Biological Monitor will be on-site during all construction activities.

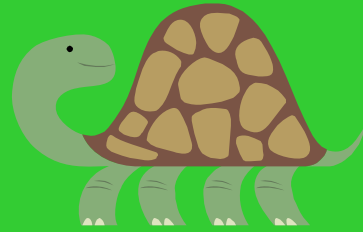
The Biological Monitor and the FCR have the authority to halt all project activities that are in violation of these protective measures, or if a desert tortoise inadvertently wanders into the construction site.

The Authorized Biologist will be contacted *immediately* if a desert tortoise enters the project site.





Mitigation Measures



Workers will inspect for desert tortoise under each and every vehicle prior to moving it. If a desert tortoise is present, the worker will contact the FCR and Biological Monitor. The vehicle will not be moved until the desert tortoise moves out from under the vehicle *of its own volition* or until the Biological Monitor or Authorized Biologist determines that the vehicle can be carefully moved without harming the desert tortoise.



Mitigation Measures



All construction activities will

Immediately halt

if a desert tortoise wanders into a project site. The desert tortoise would be allowed to leave of its own accord.

Construction activities

will not resume

until the desert tortoise is out of harm's way.



Mitigation Measures



Desert tortoise will ONLY be handled by the Authorized Biologist and only if necessary.

The Authorized Biologist will follow the techniques for handling desert tortoise in “Guidelines for Handling Desert Tortoise during Construction Projects”

(Desert Tortoise Council 1986).



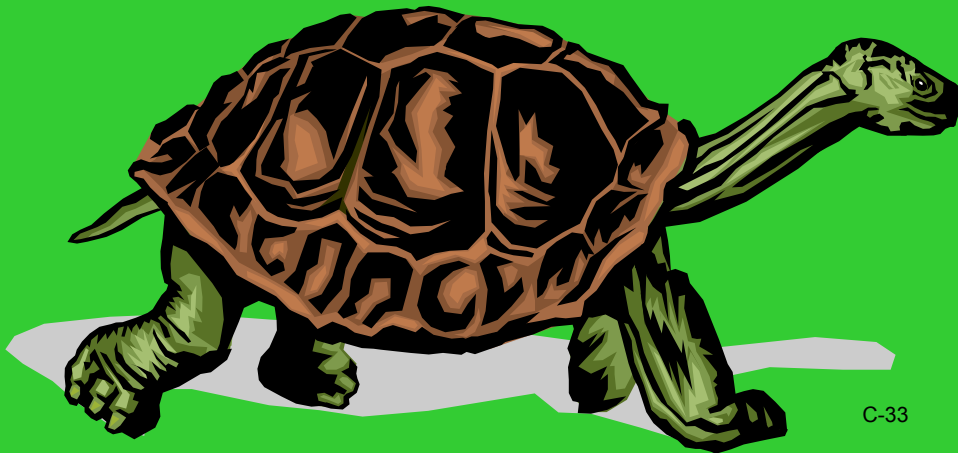


Mitigation Measures

All trash and food items will be promptly contained within **closed, raven-proof containers**. These will be regularly removed from the project site to reduce the attractiveness of the area to ravens and other desert tortoise predators.



QUESTIONS??



C-33