Desert Tortoise Conservation in the Tucson Southlands HCP Urban Interface

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Outline

2009 Desert Tortoise Project – Southlands Findings

- Study Design and Survey Methods
- Distribution and Abundance
- Habitat
- Modeling

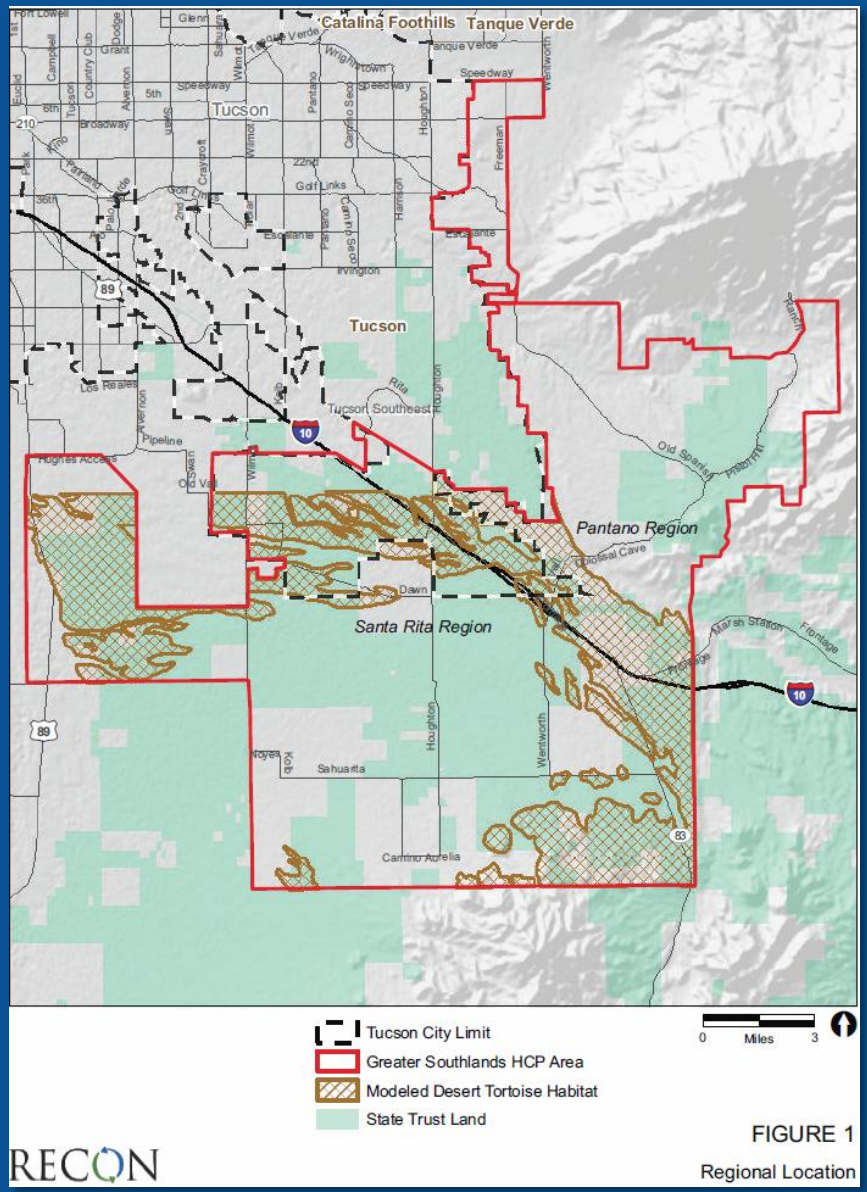
Conservation Problems in the Urban Interface

I. Urbanization-related Threats
II. Information Needs
III. Conservation-approach Decisions

2009 Desert Tortoise Project Southlands Findings

- Study Design and Survey Methods
- Distribution and Abundance
- Habitat
- Modeling

2009 Desert Tortoise Project Southlands: Study Design



2009 Tortoise Project Southlands: Study Design – sampling types

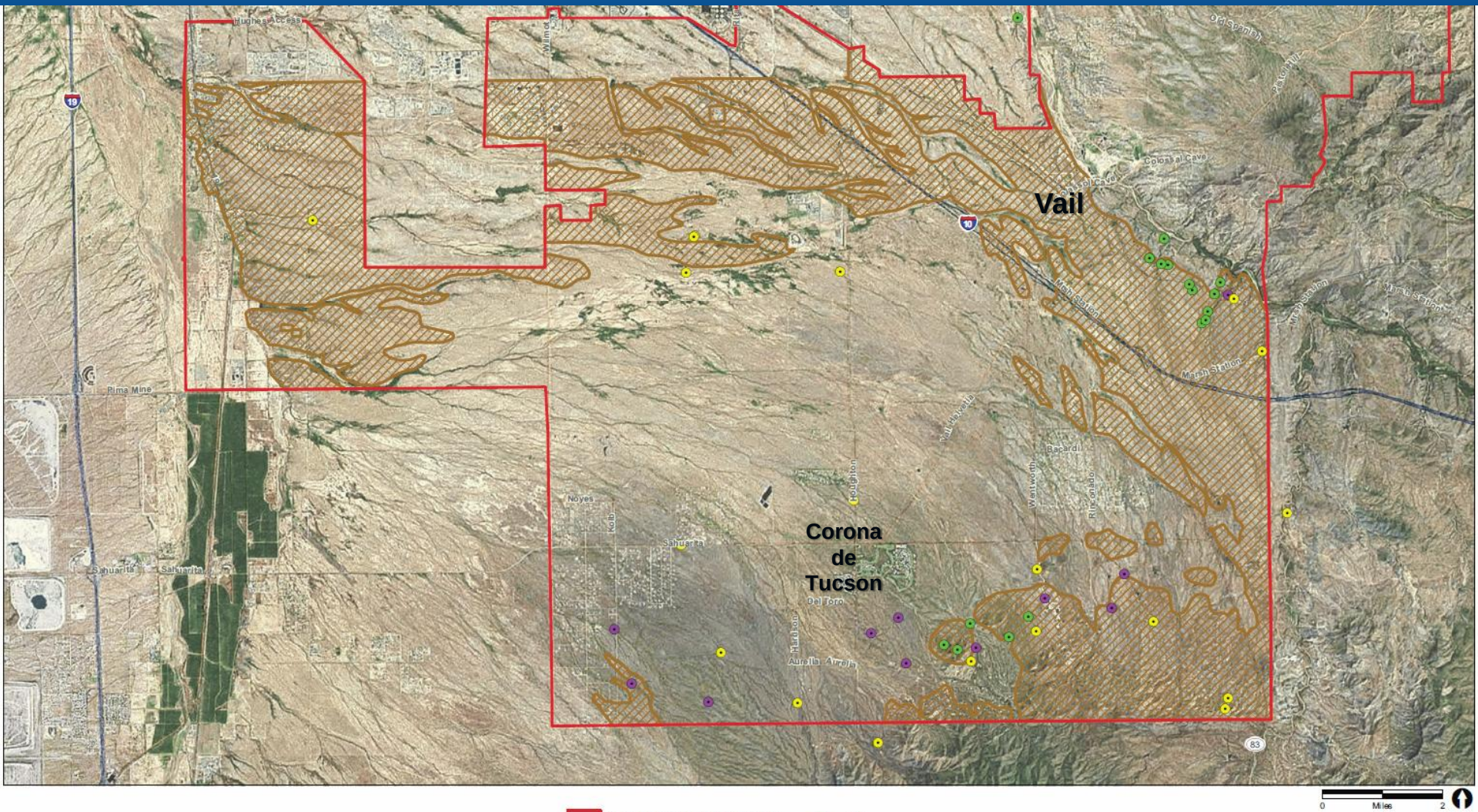


FIGURE 2

Locations of Plots, Transects, and Time-constrained Searches

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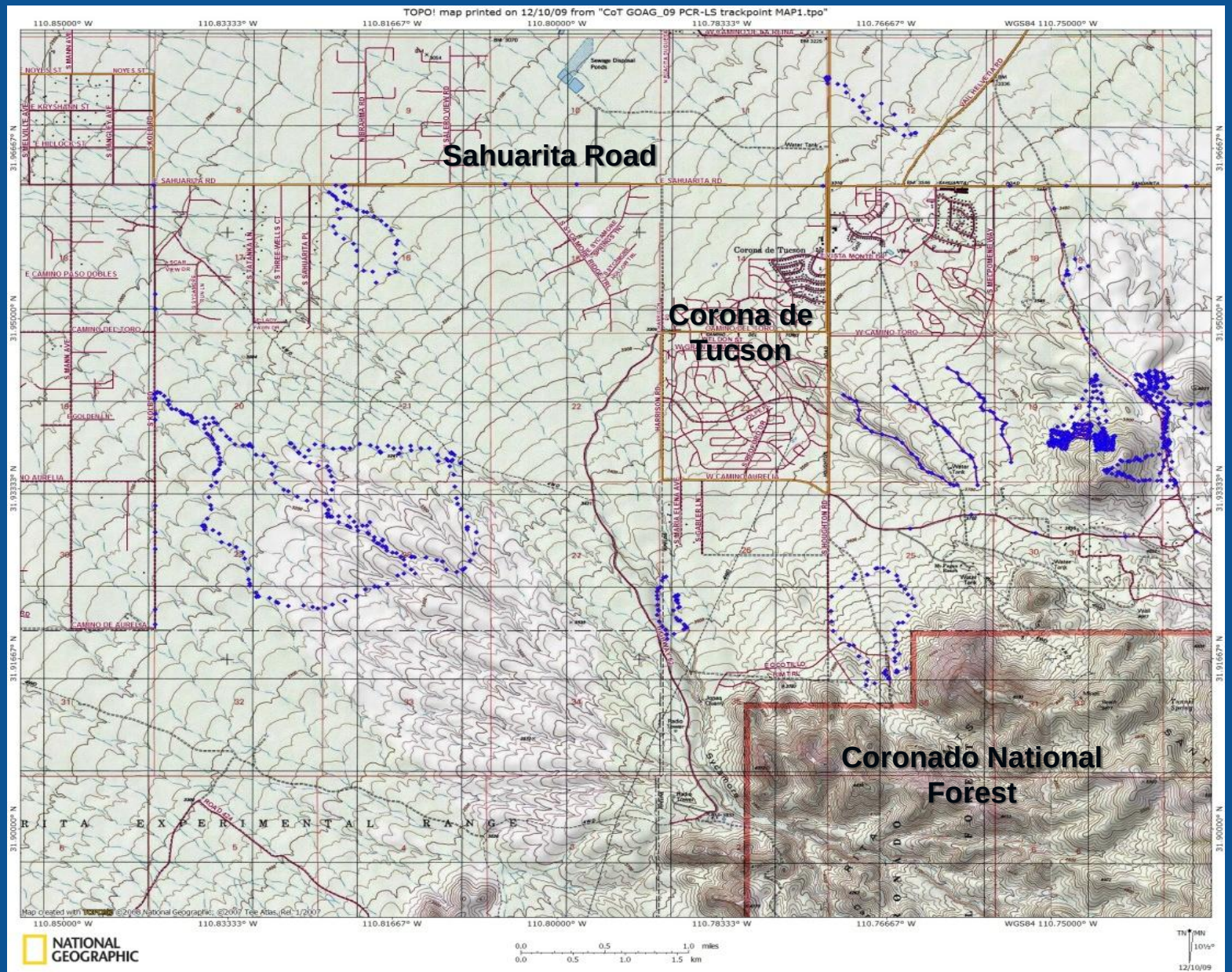
2009 Tortoise Project Southlands: Study Design – track points



Desert Tortoise Project Southlands : Distribution and Abundance

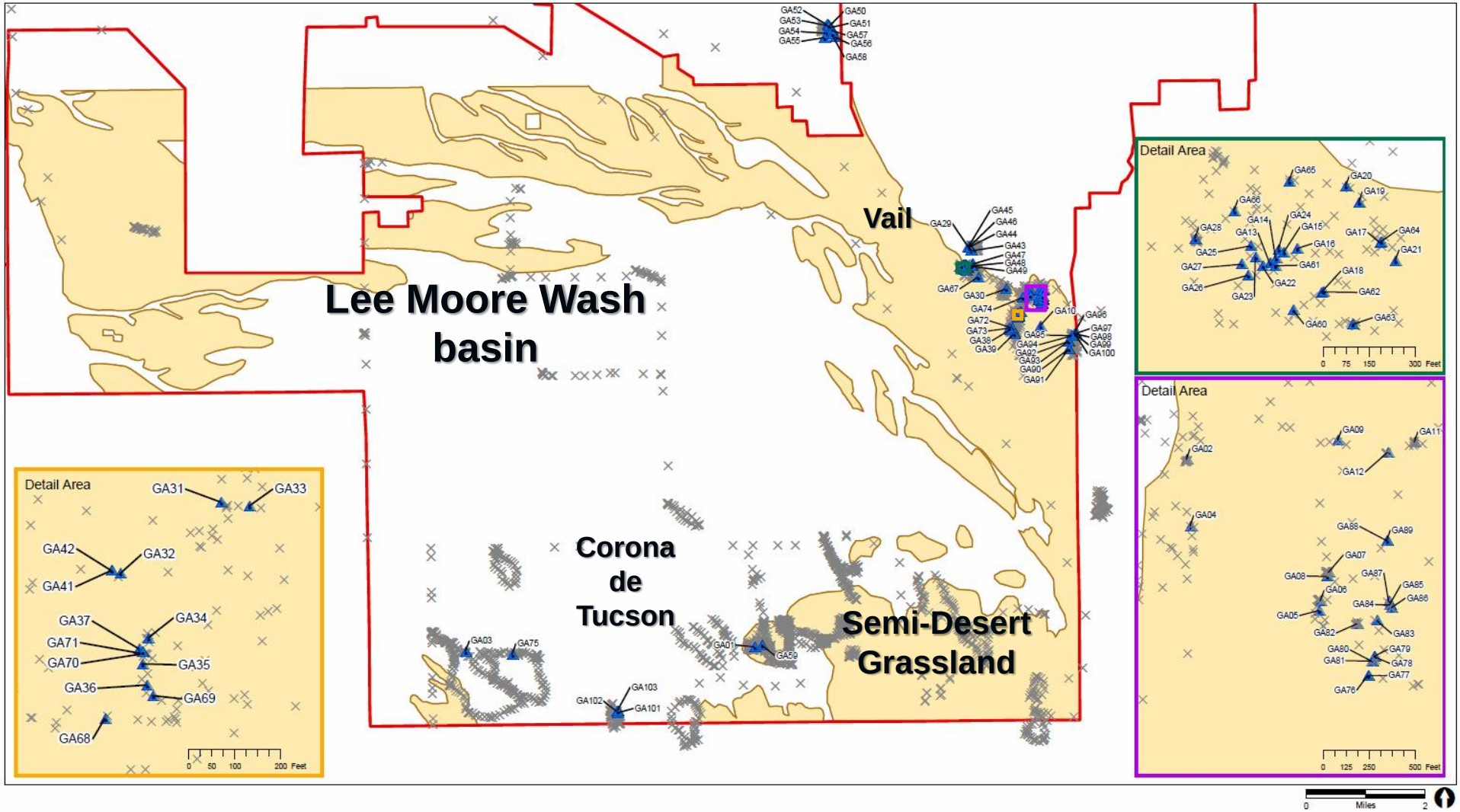


FIGURE 3

Desert Tortoise Southlands: Habitat – Sonoran Desert rockslope

Desert Tortoise Southlands: Habitat – Pantano Wash bluffs

Desert Tortoise Southlands: Habitat – Pantano Wash caliche

Desert Tortoise Southlands: Non-habitat – recently exposed caliche

Desert Tortoise Southlands: Non-habitat – recently exposed caliche

Desert Tortoise Southlands: Non-habitat – Semi-Desert Grassland

Desert Tortoise Project Southlands : Habitat Modeling

Desert Tortoise Conservation Problems in the Sonoran Desert Urban Interface

- I. Urbanization-related Threats
- II. Information Needs
- III. Conservation-approach Decisions

Conservation Problems in the Urban Interface

- I. <u>Urbanization-related Threats</u>:
  - Collection of tortoises as pets
  - Domestic dog attacks
  - Increased abundance of birds preying on juveniles
  - Diseases from exotic pet tortoises / other reptiles
  - Roadkill
  - Entrapment in pools, pits, wells, etc.
  - Metapopulation fragmentation
  - Hybridization
  - Habitat destruction and entombment

Conservation Problems in the Urban Interface

- II. Information Needs:
  - Locations of tortoise populations and human plans
  - Tortoise distribution under climate change
  - Habitat types and landscape scales
  - Behavioral ecology: habitat and microhabitat use
  - History: co-existence / decline with urbanization
  - Can urbanization and tortoises co-exist?

Conservation Problems in the Urban Interface

- III. <u>Conservation-approach Decisions</u>:
  - Implement co-existence approach?
  - Avoid urbanization in tortoise population areas?
  - Mitigate damage to tortoises and populations?