



Morongo Basin Alternative Futures

Development & Desert Wildlife Species

Development patterns generated for each of the alternative scenarios were evaluated for their potential impact on seven desert wildlife species:

- ◆ *Badger*
- ◆ *Bighorn Sheep*
- ◆ *Bobcat*
- ◆ *Desert Tortoise*
- ◆ *Mountain Lion*
- ◆ *Mule Deer*
- ◆ *Pacific Kangaroo Rat*

Between 2006 and 2012, communities in the Morongo Basin of California came together as the Morongo Basin Open Space Group to develop and implement collaborative approaches to regional conservation planning.

Participants worked together with a shared goal of supporting economic development and growth in the region while respecting the rural settings that visitors and residents treasure. The *Morongo Basin Alternative Futures* project was designed to demonstrate how different approaches to where and how growth occurs over the next 20 years may impact how local wildlife live in and move through the basin.

Alternative Futures considered five alternative scenarios for growth and development:

- | | |
|-------------|--------------------------------------|
| Scenario 1. | Existing General Plans |
| Scenario 2. | Jobs/Housing Balance |
| Scenario 3. | Conservation and Compact Development |
| Scenario 4. | Rural Living Emphasis |
| Scenario 5. | Base and Park Mission Protection |

For each of the five scenarios, predicted housing development patterns were generated. Along with housing patterns for current conditions and full build out, they were used as input to an analysis of the effects of development on key desert wildlife species. While results of this innovative approach to combining scenario planning and wildlife indicate that conservation-aware development approaches are better for wildlife, they also indicate that *any* planned development is better for wildlife than allowing an area to build out without thoughtful planning.



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ALTERNATIVE SCENARIO FOOTPRINTS

Scenario 1. Continuation of existing general plans and development practices. (Shown at right).

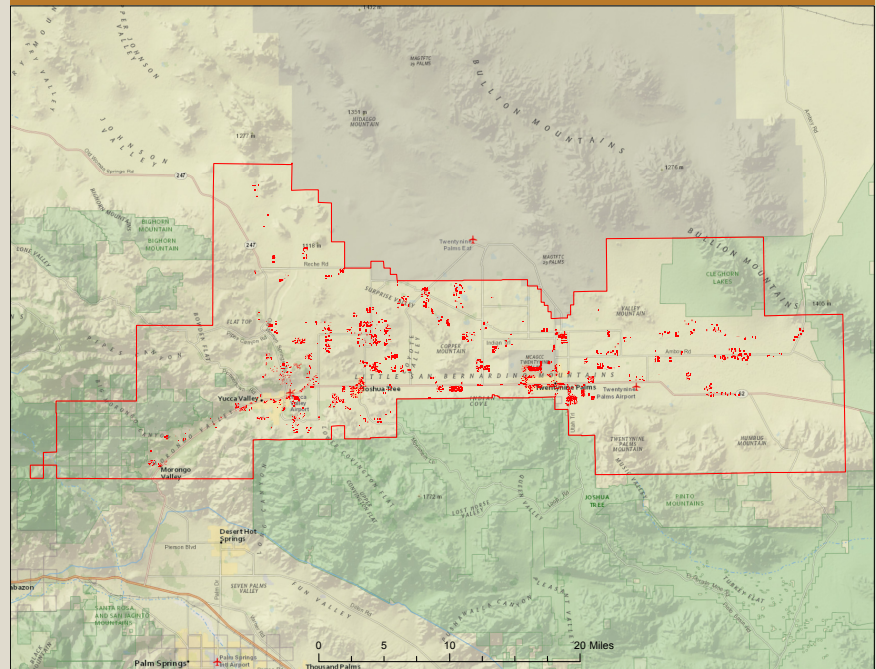
Scenario 2. A compact development pattern with a focus on housing in the vicinity of jobs.

Scenario 3. Policies that encourage conservation of local natural areas and steer development to areas of existing development with transit opportunities. (Shown below).

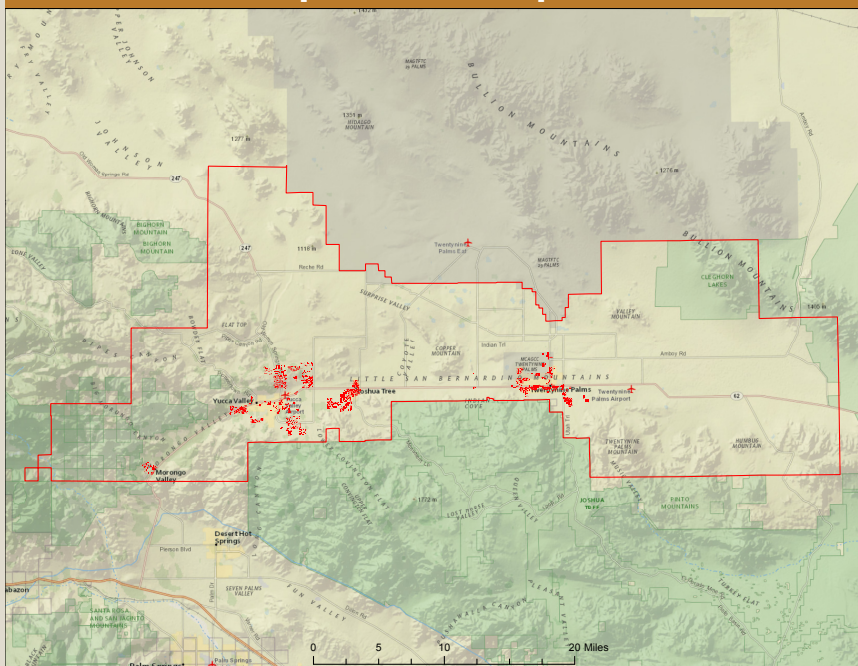
Scenario 4. Development is directed toward the many two – five acre “rural living” parcels, many arranged in a checkerboard with BLM lands.

Scenario 5. Development is avoided in areas recognized as conservation priorities for the local national park and Marine base.

Scenario 1: Existing General Plans



Scenario 3: Conservation and Compact Development



To view all the scenario maps, visit our website - www.sonoraninstitute.org/morongo-basin-alternative-futures

Maps and analysis were generated using Fregonese Associates' Envision Tomorrow scenario toolkit. Projected population growth 2010-2035 of 16,882 persons was distributed in each scenario.

Potential Development Impact

	Scenario 1	Scenario 2	Scenario 2	Scenario 4	Scenario 5	Full Build Out
Landscape Resistance	2.6	1.2	0.7	3.5	1.2	32.8
Total Habitat	-0.8	-0.1	-0.1	-0.4	-0.1	-18.9
Core Habitat	-0.7	0.0	0.0	-0.2	0.0	-16.1

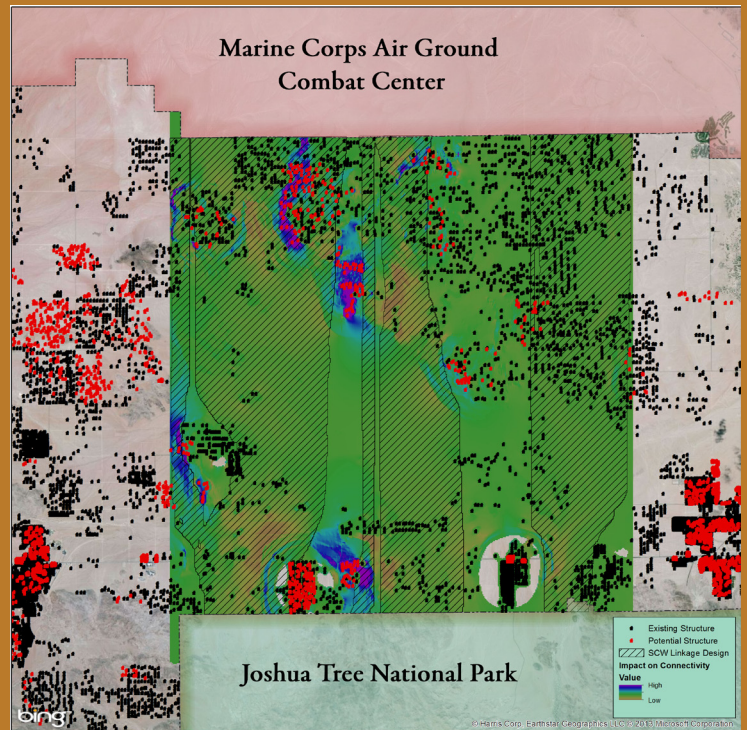
Average % change in landscape metrics (all species) comparing scenarios to current conditions.

WILD PLANNER RESULTS

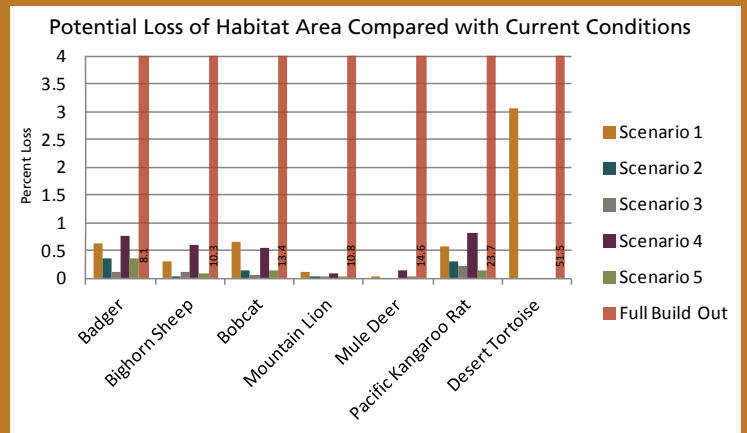
Development has the potential to impact places where plants and animals live and move. Craighead Institute's *Wild Planner* tool was used to assess development impacts on key desert species for seven alternative development patterns: the five *Alternative Futures* development patterns, current conditions (a distribution of current housing units), and full build out (a pattern assigning housing to all parcels where houses can legally be built).

The results of the *Wild Planner* analysis allow planners to consider impacts of different development patterns on different species; not surprisingly, predictions vary across species and scenarios. However in general, Scenario 1 (Existing General Plans and Policies) and Scenario 4 (Rural Living Emphasis) were the scenarios that had the most negative impacts on habitat for all species. Scenario 4 also had the most impact on habitat connectivity, increasing landscape resistance by 3.5% across all species. Scenario 3 performed best for both habitat loss and connectivity across all species; however the Base and Park mission protection scenario (Scenario 5) outperformed Scenario 3 in some cases.

See species inserts for more detail.



Scenario 4 impact on bobcat habitat.



Photos: mountain lion - Bill Perry; badger - foxtrot101; bobcat, Pacific kangaroo rat, bighorn sheep, tortoise & mule deer - USFWS.



USING THE RESULTS

The results of this innovative integration of scenario analysis and Wild Planner wildlife analysis can be used in local and regional planning efforts to inform decisions about where and how growth happens. These decisions can be tailored to make small changes in development that can have big positive impacts for species.

For example:

- While overall badger habitat appears relatively secure, development in the Desert Hot Springs area could compromise habitat in that area.
- Bobcat connectivity may be improved by creating lateral connections for movement between the defined SC Wildlands linkage design areas, based on existing development patterns.
- Disturbance zones for desert tortoise could be decreased with successful efforts to reduce raven populations near development, increasing core habitat for the tortoise
- A gap in development east of the mapped mountain lion linkage may be crucial for maintaining connectivity for mountain lions across the valley.
- Results show how adjusting the location of a small number of structures (for example, 5 in the case of the mule deer) can effectively reduce or eliminate development impacts on a species.

USE OPEN SOURCE PLANNING TOOLS TO PROTECT WILDLIFE IN YOUR COMMUNITY

Whether you live and work in a rural or an urban area, the wildlife that lives in and travels through your “backyards” is a community treasure. By making thoughtful choices about how and where homes and neighborhoods are added, desert wildlife can remain a benefit for residents and visitors.

Combining scenario planning and wildlife planning tools is an innovative approach to proactively consider the impacts of different choices. These tools can be implemented in a variety of settings to plan for thoughtful development that considers which areas are critical for wildlife.

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