Desert Tortoise Care and Protection at the Ivanpah Solar Project

The Ivanpah project owners – NRG, Google and BrightSource Energy – are going to great lengths to ensure minimal impact to the desert tortoise population at and near our project site. In fact, our desert tortoise care program is actively supporting efforts to repopulate the species in the Ivanpah Valley.

**Is the desert tortoise an endangered species?**

The desert tortoise is federally-listed as a *threatened* species – not an endangered species. “Endangered” is a more serious designation within the Endangered Species Act, meaning that the species is currently on the brink of extinction. “Threatened” species do not currently face the same risk, although they are protected to help prevent their becoming endangered.

**What steps are you taking to protect and repopulate the desert tortoise populations at Ivanpah?**

- **Financial Investment:** The Ivanpah project owners have to date spent approximately $22 million caring for the desert tortoises found on or near the site. In addition, we will spend up to $34 million to meet the project’s federal and state mitigation obligations.

- **Biologists:** At any given time, there are dozens of trained, Agency approved (Bureau of Land Management, US Fish & Wildlife Service, California Department of Fish & Game and California Energy Commission) biologists on site to make sure that every tortoise on site is given the highest levels of care. At certain periods of construction, there have been over 150 biologists on the project.

- **Nurseries:** The tortoises found on the project site were first moved to a designated nursery where biologists carefully recreated their burrows and provided food and water. While in the nursery, biologists ensured that there was no interaction between the tortoise and conducted the appropriate medical tests to ensure the animals were healthy and free of a respiratory disease common in the species.

- **Juvenile “Head-Start” Care Program:** All juvenile tortoises, classified as tortoise under 120mm in size including newborn hatchlings, will be provided specialized “head-start” care and protection for approximately the first five years of life, or until they are large enough to resist predation from ravens, kit foxes, and coyotes and other factors such as drought and disease.

- **Translocation:** Eventually, all of the tortoises cared for on the project site will ultimately be relocated back into their natural habitat nearby. The majority of the tortoise will remain within their original “home range” (unlike tortoises translocated long distances to unfamiliar habitat) and will have comparable plant diversity and richness as the Ivanpah site. Keeping the tortoise close to their original homes greatly increases the rate of success for translocation.

- **Long Term Monitoring:** Biologists will track the tortoises that are translocated from the project site as well as the tortoises outside the project site within the “receiving” area for five years. A total of 80 adult and sub adult tortoises were found on site, as well as 93 juvenile tortoises many thought too small to be detected. An additional 53 tortoise were hatched in the tortoise nurseries in the fall of 2011. The biologists will use tracking information from nearly 400 tortoises, including those in nearby populations.
that are monitored as “controls” for tortoise found on-site, or in areas that will receive tortoises that are moved off-site, to ensure the safe integration and gather additional insights on the desert tortoise and its recovery.

**What is the natural survival rate of the desert tortoise?**

In its natural environment, only about 2% of desert tortoises survive to adulthood (reproductive age). Tortoise care programs for hatchling (newborn) and juvenile tortoise provide a critical path for improving survival rates by providing support and protection from ravens, kit foxes, and coyotes and other factors such as drought and disease during approximately the first five years of life.

**What can be done to help increase the survival rate of desert tortoise?**

In an effort to help facilitate the rebuilding of the desert tortoise population in the Ivanpah Valley area, we have developed a world-class juvenile “head-start” care program at the Ivanpah project. Head-start care programs provide support and protection for hatchling and juvenile tortoise during approximately the first five years of life, or until they are large enough to resist predation and other factors such as drought and disease.

At the Ivanpah head start facility, we are currently caring for more than 100 juvenile desert tortoises, including 53 newborn hatchlings born in the fall of 2011. The facility includes highly secure, specialized juvenile tortoise pens that carefully protect from predators – which include ravens, raptors, ground squirrels and coyotes. Head start programs have been found to provide a critical avenue for enhancing repopulation of the desert tortoise.

**How much land within the Mojave Desert is designated for desert tortoise habitat?**

Desert tortoise habitat is divided into six large areas, called “recovery units,” spanning tens of millions of acres across Arizona, California, Nevada and Utah. The Ivanpah site is within the approximately nine million-acre Northeastern Mojave recovery unit, comprising approximately four hundredths of one percent (0.04%) of the unit’s total acreage.

In the Ivanpah Valley alone, over 630,000 acres have been designated as Critical Habitat for desert tortoise. The Ivanpah site is not located within any defined Critical Habitat, and has been designated by the BLM as “Category 3” habitat – the “least important” category of habitat for the desert tortoise. In total, over 6.4 million acres have been identified as critical habitat for the tortoise across the six recovery units, including 4.75 million acres in California.

**How will your desert tortoise care and protection efforts affect the tortoise population long-term?**

As a result of our tortoise care and protection efforts, many more healthy tortoises will be returned to the Ivanpah Valley than would have survived had the Ivanpah project not been built. Additionally, each of the translocated tortoises, their hatchlings living in the head-start program and the recipient tortoise population are being studied extensively by biologists. The data gleaned at the Ivanpah project will help the desert tortoise biologist community learn more about the species and determine additional ways to help the population once again flourish.

**Which public agencies do you consult with on your tortoise care efforts?**

We work extensively with government agencies such as the California Energy Commission, Bureau of Land Management, California Department of Fish and Game, U.S. Fish and Wildlife Service, Mojave National Preserve and the environmental community to develop a thoughtful and responsible tortoise care and mitigation strategy. The project also underwent stringent California Environmental Quality Act and National Environmental Policy Act reviews.