Habitat:

Bighorn sheep occur in open habitat associated with steep terrain that provides security “escape” cover, which often occurs as small, discreet patches. Bighorn sheep use areas within 300 m to 1 km from escape cover. Therefore, clusters of small escape patches may represent a cumulative “meta-habitat” suitable for bighorn sheep. Vegetation types used by bighorn sheep are varied, and include low sage, pinon–juniper, desert riparian, palm oasis, and desert scrub. Sheep may locate closer to water sources in the summer. Potential habitat modeled as part of the SC Wildlands Linkage Design studies for Morongo Basin corresponds strongly with the mapped corridors for bighorn on the eastern and western edges of the basin.

Potential Development Impacts:

It does not appear that bighorn sheep habitat is significantly threatened by any of the Alternative Futures modeled development scenarios; due in part to the type of terrain inhabited by the species, which does not tend to overlap with prime areas for building and development. Modeled impacts to habitat were greatest in Scenarios 1 and 4, but these were
small and concentrated mainly in the Copper Mountain BLM Off-Road Vehicle area and the foothills southeast of the town of Joshua Tree (Figure below), in areas more likely used by bighorn sheep in the past, especially for the Copper Mountain area.

While planned development under the five Alternative Futures scenarios does not appear to present a threat to bighorn habitat, under a full build out scenario an estimated 10% of total habitat could be lost. While full build out is unlikely to be fully realized, it is useful to consider its impacts to call to attention parcels available for development that could impact habitat. Shown below are portions of the western linkage that could be significantly threatened by development around Desert Hot Springs (outside the Morongo Basin study area, but included in the linkage) resulting in a 27% increase in landscape resistance for connectivity.

Strategies for Protection:

To preserve habitat and connectivity, studies such as these can be used to identify potential areas of development and conflict and proactively plan development. For example, an area of increased landscape resistance modeled in Scenario 2 near Desert Hot Springs (below) shows how a proposed single structure can create a bottleneck in a narrow movement area. Relocating this proposed single structure would eliminate the impact. Local planning and site level studies can be used to develop footprints with the least impact to movement and habitat.

Alternative Futures predictions assume that bighorn sheep traveling through linkages are protected from domestic livestock disease; however domestic pets often roam and can be a threat to wildlife. Education of the local public as well as funding of animal control, spay and neuter, and adoption programs can help reduce populations of unwanted or abandoned pets that could pose a threat.

When possible, the construction of new roads in the linkage design, and especially in bottleneck areas, should be avoided, and existing roads and recreational trails closed during reproductive seasons. Off highway vehicles should be excluded from habitat areas, with closures and exclusions well publicized and enforced.

Species information from SC Wildlands reports; see www.scwildlands.org.
Photo Credit: USFWS.
Map Credit: Brent Brock, Craighead Institute.