

# Small desert beetle found to engineer ecosystems

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The catastrophic action a tiny beetle is wreaking on the deteriorating Chihuahuan desert will be revealed in the April edition of the Royal Entomological Society's *Ecological Entomology* journal.

The mesquite girdler *Oncideres rhodosticta* may only be 13mm long, but it has a big role in shaping the landscape. Research carried out by Benjamin Duval and Walter Whitford at New Mexico State University has revealed that the beetle is speeding up the degradation of grasslands in the Chihuahua desert, the landscape so stunningly depicted in this year's Oscar-winning film *No Country for Old Men*.

The mesquite girdler does this by regulating the growth of the mesquite shrub, ensuring their offspring have a plentiful supply of food. The beetles chew girdles around the older stems of the shrub, which forces the plant to regrow new stems the following year. The new stems supply the beetle larvae with food, but the mesquite shrub takes more nutrients from the soil for its increased growth, leaving less for the other plant species such as grasses.

Up to 150 years ago, the North Chihuahuan Desert was completely covered in grassland. The picture today is very different – dunes and mesquite shrubs cover much of the landscape.

Duval said: “Although the desertification process was likely started by overgrazing cattle, the ecosystem engineering impact of the mesquite girdler could finish off the process”.

Source: Wiley

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