

SMALL

Tiny creatures may be beautiful or ugly, but mostly they are neglected.



ROBERT

THE HORRID

ground-weaver has a mighty name. It suggests a dangerous beast from the old stories, a creature in league with the Jabberwok and the frumious

Bandersnatch, possibly imaginary but nonetheless fearsome.

The truth is a little different but no less extraordinary. The horrid ground-weaver really exists, though it is nearly invisible. And it is quite capable of striking fear, at least among the ecologically inept.

Nothophantes horridus is a tiny spider – about 2.5 millimeters long. It is also shy. Mostly it lives underground in the fissured limestone of abandoned quarries and even when it emerges to forage, it hides under stones and other debris. No one knows much about it.

Mostly what is known is that *Nothophantes horridus* is rare. It has been found only in three small abandoned quarries near the city of Plymouth in southwest England. One of those quarries is now an industrial park. The spider is included on the IUCN's Red List of Threatened Species, categorized as "critically endangered."

This year, the tiny spider with the mighty name helped defeat a land development proposal for the old Radford Quarry, one of its two remaining habitat locations. The quarry was already a designated County Wildlife site and BugLife, an environmental charity, got 8,700 signatures on a "save the horrid ground-weaver" petition. The city council voted unanimously to deny approval to the development, and the council's decision was upheld upon appeal.

How often does that happen?

More importantly, could that happen more often? Could humans be more often moved to pay serious attention to creatures that are mostly invisible and don't do us any immediately obvious good or harm?

Certainly we could do better. The human record with small things has not been good. Except when they are numerous and irritating, we have mostly not noticed creatures the size of the horrid ground-weaver. Until we had microscopes, we had no conception

fish and by-catch species) but also additional assessments of plant, fungi and invertebrate species that will recognize some small creatures, perhaps even a few microorganisms.

Nonetheless, the IUCN remains a body that aims to provide a "barometer of life" but considers only animals, plants and fungi, and concentrates mostly on the ones we can easily see. The world of bacteria, micro-sized fungi, archaea, protista (plant-like algae and animal-like protozoa), viruses (which

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of microscopic beings. Unless they threaten health – such as the parasitic malaria protozoa, tuberculosis bacteria and Ebola virus – we still put little priority on learning more about what tiny life forms exist, let alone what they do, how they interact and how their influences fit with everything else.

The IUCN's Red List provides an illuminating indicator of both the traditional limitations and anticipated expansions of attention. The Red List represents an enormous and immensely valuable effort to collect reliable information about species, especially ones imperiled by human activities. So far, however, the most fully assessed categories – mammals, birds and amphibians plus six groups of aquatic species and two of plants – include only creatures that are bigger than the horrid ground-weaver.

The IUCN's plans for more comprehensive coverage include targets for species facing evident threats (eg, commercially harvested

may not technically qualify as life forms) and symbiont combinations is huge, important, and missing.

Given the present inadequacy of information on well-recognized areas of biodiversity stress and decline, it is no surprise that the IUCN focuses on the big visible concerns. As a species-focused organization, the IUCN is not the first place to look for research on the smaller creatures that may be playing crucial ecological roles. Moreover, probably much more needs to be known about the diversity of microscopic species before expansion of threat assessments can be realistic.

For the time being, however, we can see the horrid ground-weaver's recognition in the IUCN's Red List and the successful defence of its quarry home as modest but hopeful first victories for the very small. **AV**

Robert Gibson is the chair of **AJ's** editorial board and a professor in the Faculty of Environment at uWaterloo.