**Reviewer 1:**

In this article by Depeux *et al.*, the effects of stressful temperature and humidity regimes are tested on adult terrestrial isopods in order to ascertain what effect these stressful environmental conditions may have on isopod reproductive, growth, immune system, and survival metrics. The study was conducted in two parts in two different years--the temperature experiment in 2019, and then separately, the humidity experiment in 2021. The study found that increased temperature and decreased moisture were generally harmful to the isopods in question; increased temperature resulted in nearly a 2x increase in mortality, and decreased moisture led to a 2.5x increase in mortality. Reproductive success was negatively affected by increased temperature and decreased moisture, as was immune function. The study is putatively aimed at understanding the reponses of arthropods to future climate regimes.

This paper is well written, interesting, and timely. As heat and moisture are the most important regulators of insect persistence and distribution, this work is helpful in gauging invertebrate reponses to future climate scenarios. I support the publication of this article, and I have only minor comments:

 line 47-48: "survival decreases with increasing temperature" makes it sound like a linear function, when surely, it is a quadratic function where there is an optimal temperature where survival is at it's peak, with a drop it survival on either side of the curve where temperature is higher and lower than the optimum. I would clarify this phrase.

line 60: "woodlice" (plural) should be "woodlouse" (singular). Change throughout.

line 128: I would state here that the immune function tests are destructive

line 234: Is "time" age in days? Days in treatment? Please clarify.

line 252: I would put at the beginning that all analyses were done in R

line 257: "Survival was" instead of "The survival was."

Figure 1. On my black and white printer, all the colors look the same. Specifically, in C and D, I cannot tell the colors apart for the treatments.

**Reviewer 2**:

I recommend rejecting for the following reasons.

Firstly the paper is not providing anything new. It has been known for at least 40 years since I was at secondary school that woodlice are sensitive to moisture and temperature conditions.  Woodlice are used as a paradigm  in science classes to demonstrate how animals use taxes and kineses to find suitable habitat.  I published a lesson plan for demonstrating taxes in woodlice in the 'journal of Biological education' 20 years ago.

Secondly, the researchers used a laboratory grown line of woodlice that had been reared under constant conditions of daylength, temperature and humidity 40 years.  This strain would have very different characteristics from a wild strain and would be less likely to be adaptable to any temperatures or humidity deviating from the range they are used to.

Thirdly, I question the ethics.  Animal experimentation is becoming less acceptble.  As we learn more about animal sentience, more animal taxa are being included in the circle of moral concern.  The New Zealand Animal Welfare Act includes crabs and shrimps as animals showing 'sentience'.  Experiments on these animals need ethics committee approval, and can be rejected if the costs to the animals outweigh any benefits.

Woodlice are not decapods, but they are crustaceans, with the same advanced nervous system as decapods.  It is therefore likely that they feel pain, which makes lethal experiments on them ethically questionable, especially with no ethical oversight.