

Article Under Review: The false widow spider *Steatoda nobilis* is a notable invasive species.

Recommendation:

I recommend this article.

Summary:

This article synthesizes considerable personal observations of the false widow spider (*Steatoda nobilis*) across Britain in rural and urban habitats and available media and public reports spanning multiple years. These observations characterize the range, putative symptoms from bites and the lifestyle of this spider. These observations are not in line with the popular understanding of the risks these spiders pose, nor the current distribution described by the British Arachnological Society. The most important suggestion in this article is that the chance of being bitten by this spider is much higher than perviously described, due to recent increases in abundance, observed aggression, and the synanthropy of this species. As such, the author urgently suggests action should be taken to mobilize interdisciplinary professionals to assess the risks of bites and educate the public and media about the presence of this spider and appropriate measures to take in response. From the outset of the paper, the author made clear the intention was to draw attention to these issues to stimulate further (more rigorous) studies. Still, the observations presented, including video evidence, make a convincing case for the arguments and conclusions in this article.

Comments:

Ln 1: The title is underwhelming considering the implications in this article.

Consider adding the phrase “emerging public health threat” or something similar.

Ln 34: The manuscript would benefit tremendously from a description of the lifecycle and ecology of the spider in the introduction.

Line 114: This description should be accompanied by a map of the sites where this spider was observed each year.

Ln 135-142: Here, a figure showing similar spiders side-by-side with differences highlighted would be informative.

Ln 163: What factors may contribute to displacement of native species? The discussion about this later could be expanded upon here.

Ln 217: Why do you predict this is much higher?

Ln 219: This seems critical for understanding the spread and for establishing control methods. I suggest expanding upon this and mentioning it earlier.

Ln 236: Did colonization of this structure occur at a similar rate with other spiders in these two years or was this limited to *S. nobilis*?

Ln 260: What was the rate for years before? Do data for each year show an increase from 2014 through to 2018 (if available)? Does the location of bites correspond with the range you suggest for this spider?

Ln 275: Would “recognize” work better than “realize”? “Realize” implies the bite would have no symptoms.

Ln 283: Perhaps “skepticism” may work better than “caution” here?

Ln 305: If all victims in this table are adults, say this in the legend.
Table 1: Add a column with the source of these reports. Fill in the blank cells with something explanatory.
Ln 389: Could aggression vary by population or spider density? If so, how might this impact expected bite risk?
Ln 422: Can you add a citation to this sentence?
Ln 521: I suggest you remove this section and all assertions that this spider is acting as a “bacterial carrier” or vector. This theory is particularly dubious with the sentence on line 525. While this may be possible, it requires significant evidence. This is especially true with the points made about drug-resistant bacteria, which would need evidence of enrichment in these bacteria.
Ln 555-560: I suggest removing this section, which is too speculative.
Ln 635: This is another mention of “bacterial carriage” that I suggest removing.
Ln 647: Can you cite or recommend a method for identification using DNA?
Ln 677: This was covered internationally: USA Today has an article on this.
Ln 739-748: This is a fine idea. How can it be implemented? Why aren’t arachnologists talking with media already? Can B.A.S. train arachnologists in media outreach and/or connect media with relevant experts? These practical suggestions would strengthen the article.
Ln 790-799: A major barrier for this solution, which you mention earlier, is the amount of misinformation out there. How will this new information be set apart? Would it be beneficial to focus on teaching people to distinguish between high- and low-quality sources for spider information?
Ln 815: Since this paper argues that this is not taken seriously enough in places, a discussion about the differences between media alarmism versus “justified alarm” may be useful.
Ln 933: Why is climate change never mentioned or discussed here? This seems highly relevant. Was this an intentional decision?
Ln 1058: Given that webs are inter-generational, would this mean web removal would be expected to inter-generational effects on spider success?
Ln 1131: This is the first mention of gene drive in the article. I suggest removing it. While developing gene drive in this spider is not outside the realm of technical possibility, I expect releasing sufficient spiders with a suitable gene drive would be hard to justify, particularly with the risks described in this paper.

Suggested Revisions:

Ln 49: change “significant a” to “prevalent this”
Ln 79: remove the comma after “bites”
Ln 208: add “from” before “*S. nobilis*”
Ln 265: change “I have heard of via” to “relayed by”
Table 1: add space to cell C3; remove “c.” from cell C6.
Ln 386: change “disturbing” to “reprehensible”
Ln 419: add “and amphibians” after “reptiles”
Ln 474: add “)” after “1991”
Ln 643: add a comma after “case”
Ln 1087: add “formally” before “developed”

Ln 1121: remove “vectors of MRSA”