



October 21, 2020

Dear Editor:

Please consider our paper, entitled "Spatial and temporal shifts in photoperiod with climate change," for publication in *New Phytologist*. This manuscript is a revision of an earlier submission (NPH-R-2020-34081). We include a point-by-point response to reviewer comments.

As you may recall, our manuscript addresses an urgent question in plant biology: What are the implications of the altered photoperiod that plants experience with climate change-induced shifts in their ranges and seasonal activities? The two most-observed biological impacts of climate change are shifts in space (range shifts) and time (phenological shifts). Both alter experienced photoperiod, which could dramatically affect performance and fitness. However, the magnitude of effects from shifts in photoperiod with climate change are unknown or unquantified for most species.

All of the reviewers were enthusiastic about the previous version of the manuscript, noting that it was "well written" with "beautiful figures." They also offered suggestions for improvement, including some expansion of portions of the manuscript, for example adding a broader context and including discussion of how our points relate to autumn phenological shifts. The Reviewers also suggested changes to figures, including adding an additional panel to one figure and revising another figure to make it more understandable to readers, as well as incorporating a SI figure into the main text.

We greatly appreciate the suggestions of the reviewers and editor, and have revised our manuscript to address their comments. We have moved the suggested figure to the main text and revised the figures, as suggested, as well as adding a new paragraph on relevance of phenological shifts to other phenological events, including autumn phenology. We feel that our revised manuscript is greatly improved, and hope you will find it suitable for publication in *New Phytologist*.

Sincerely,

A handwritten signature in cursive script that reads "Ailene Ettinger".

Ailene Ettinger

Quantitative Ecologist, The Nature Conservancy- Washington Field Office
Visiting Fellow, Arnold Arboretum of Harvard University