Ecological change in the native Scottish pinewoods since 1971 - data from the Bunce 2018-2022 re-survey

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**Referee comments – Richard Thompson. Native Woodland Ecologist, Forestry and Land Scotland.**

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**General comments**

Thank you for giving me the opportunity to referee this paper. It will provide valuable empirical evidence based on a repeated dataset, in contrast to other pinewood surveys that were only a one-off view of pinewood condition.

Most of the Caledonian pinewoods, perhaps more than any other woodland habitats in the UK, have undergone profound changes between the two phases of the Bunce survey. In many cases, the 1990’s saw a substantial programme of restoration – in some cases, simply by reducing deer impacts – often in fences. In other cases, by removing plantations of non-native trees. Since the 1990’s there has been a tendency for many fences to become porous, for ground cleared of non-native plantation to regenerate with native trees but also in some cases, with abundant non-native regeneration (some of this has been removed a number of times since the 1990s). In other cases, e.g. on traditional sporting estates, there has been contrasting management inside and outside of fences, with deer numbers substantially increasing in the latter case and deer reasserting themselves within porous fences in the former. So, there has been a lot going on and often very contrasting between Caledonian pinewoods depending on management. I think a little more could be done to illustrate this and explain some of the variation, by dividing more of the data into state, eNGO and private estate. With so much change and contrast, you really have a challenge – particularly when describing the whole dataset.

The selective browsing issue is a big problem, even in sympathetically managed pinewoods. Palatable species are generally suppressed. As I have noted in my comments in the paper, you have the evidence to make more of this. Indeed, figures on the decline in palatable species shown in table S1 are of considerable interest and valuable evidence. Similarly, I think you could illustrate the issue of non-native regeneration which other surveys have shown, is a particular issue in state managed pinewoods.

Are there any trends in the wider Bunce dataset that either complement or contradict results from the pinewoods? The availability of this wider dataset seems

an opportunity to make more of – for example with holly.

A little more discussion on possible causes in change in species richness of ground flora would be helpful.

**Specific comments**

Please see my comments in the document (a Microsoft Word version was kindly provided).

**Technical and typographical corrections**

I did not notice any of these in text or tables.