(line numbers refer to the track-changes version, sorry about that)

I commend the authors for their detailed consideration of my earlier comments, specifically about the N fixation aspect of the analysis. I understand that the method of meta-analysis is limited in addressing such concerns in all details, but it is important that the results are given in context with these limitations. I think this is now done better, with some appropriate paragraphs in the discussion regarding methodology, experiment durations, and the aspect of zonally varying N-fixer cover. However, it is crucial for these limitations to be acknowledged throughout the manuscript. While a comprehensive analysis was conducted, its general meaningfulness is a bit overstated (e.g. the first sentence of the Summary) in light of what was actually done.

Some (non-exclusive) notes on this:

L203-205 seems to imply that PNL is a natural phenomenon that is now further informed by the N mechanisms that occur under eCO2. Perhaps this should be phrased more carefully, because the authors point out in the introduction that PNL is a theory that has not consistently been observed in nature.

L259: "Although a general trend of PNL alleviation has been found in this study...". I disagree with this statement. What is suggested in this study is the general trend of N cycle changes under eCO2 to converge towards increased soil N supply for plant growth, which in theory could alleviate PNL, assuming that this mechanism exists.

L291-294: With the methodological limitations of the analysis (especially the concentration on temperate ecosystems), this statement cannot stand.

Although the authors state that they checked the language carefully, there are still a lot of mistakes. Please have the language checked by a native speaker, both for grammar and appropriate scientific writing! For the individual corrections, I only made it to the end of section 4.1, but I think this is enough to illustrate my point:

Throughout: Be consistent with the use of past and present tense, especially in expressions like "our results show" vs "our results showed".

L 14, 367, and wherever else the N cycle is mentioned: "Nitrogen cycle" should not be used by itself in a sentence. Either "The nitrogen cycle" or "Nitrogen cycling".

L15: "...extensive researches have been done..." sounds strange. Maybe just "... extensive research has explored whether..."?

L20: "... but not in soil pool." should be "the soil pool" or "soil pools".

L21: "exist" instead of "exists".

L27: "...despite of the increases" I think either "in spite of the increases" or "despite the increases" would be correct.

L28: Check for the used tense, if your "analyses suggest" in L25, then your synthesis should "show" in L28.

L31: Not sure what the "feedback to climate change" means. Shouldn't it be either a feedback between two things or a response to climate change?

L35f: I think "stimulated" and "by CO2 fertilization" should go together, so "The plant growth stimulated by CO2 fertilization...".

L38: Unneeded repetition from the previous sentence. Consider "this effect" or similar.

L38: "constrained by the availability of N" would be more precise.

L48: I would use "is" instead of "are". Or just "depends" instead of "is dependent".

L66: See comment to L14.

L76f: "the CO2 fertilization effect".

L82, 118: I think it reads a bit awkward to have dataset "one" and "two" written out like that.

L84: "Then, ...".

L85: "..., where the ambient..." instead of "..., and the ambient...".

L87: "... the Intergovernmental...".

L101: It feels like there is a word missing to make this sentence complete.

L112: No need to use "nitrogen" when "N" was defined earlier.

L118: "For the dataset two,..." Don't use "the" here. Or just write "For the second dataset,...".

L118: Wouldn't "time series" be a more commonly used term?

L118f: "decadal-long" sounds strange but I might be wrong.

L120/121: Did you mean "in one way or another" ?

L126: "Then, ...".

L135: I recommend using "the first/second dataset" also in the previous section (L82, 118).

L140: "logged RR" I am not sure this is a valid expression.

L144: "Then, *a or the* random-effects model was used...".

L171: "change inorganic N in soils" needs more precision, because you mean abundance, concentration, availability etc. Inorganic N itself is not changed.

L172: "..., it increased the soil NH4+/NO3- ratio...".

L178: "the response of the NH4+/NO3- ratio...".

L192: I would prefer "..., a positive response...".

L195f: "fertilization effect" and "on plant growth" should stand together, so "...fertilization effect on plant growth did not change over treatment time in 11 experiments...".

L208: "In PNL hypothesis,..." This should be phrased differently, e.g. "According to the PNL hypothesis,...".

L210: "retention".

L213: "PNL hypothesis" needs an article.

L215: Maybe use "..., i.e. biological N fixation and leaching." Otherwise it looks as if you are listing N supply, biological N fixation and leaching as equals.

L218: "free-living".

L219-223: Maybe the two sentences should be combined, because you are referencing Poorter and Navas twice. Also, "... when nutrient level is low." is not correct language.

L224: "reduced". Use "decreased" or "was reduced".

L225: "the primary N form in leaching" could be phrased better.

L226: "free N" is imprecise.

L227-229: Rephrase to something more elegant. E.g. "In contrast, gaseous N loss through N2O emission increased under elevated CO2, although this increase was only observed when additional N was applied.

L237: "plants". Remove "for multiple times".

L240: "by the increased N fixation". I would prefer "from increased N fixation".

L247: "the long-term response" or "long-term responses".

L255: "...the relatively small number of studies.".

L262f: "...did not show diminished CO2 fertilization effect,...". Again, this needs an article or a plural.

L262-264: "CO2 fertilization effect" only needs to be written once in this sentence.

L266: "resource limitation (including N)".

L269: "..., or their combined.". Something missing here.

L271: Articles (2x).

L273: "With O3 addition, O3 significantly reduces...". Write "O3 addition significantly reduced...".