NR	Comment	Response	To do
1	the main framework that was being described was a GIS overlay, but how the different features were weighted is unclear, or I must have missed this	We describe in lines 186 to 187: "Existing spatial data for each region forms the basis for categorising the landscape features using a rule-set based on attribute features within the spatial datasets" and lines 195-196 state: "Our approach uses a defined rule-set and priorities, which we apply to regionally available data sets to achieve a landscape classification for each of our regions. " and we then detail the rule sets in lines 200ff in the remainder of the methodology section. The resulting rule set we present in the Results as figures 2,4,5 for each of the regions. There is no weighing as such, it is a prioritisation process, which we outline in lines 215 - 221	clarify in text that this is a GIS overlay using prioritisation
2	refers to other papers in the methods and the result without explaining how exactly this was integrated in the current paper and was used in the framework. As a result, it is not clear how the results were actually derived. From a reproducibility perspective, I think it would be hard to replicate the results.	Citation in the **Methods** are supporting information for example to point to further details regarding the study areas, and the example datasets for the spatial data. They are not needed to understand the methods, but would be helpful for replicating the results. Citations in the **Results** are only datasets, which are needed for reproducing the work.	clarify in-text that citations are datasets listed, not papers about methods
3	how decisions were made about different classes, where these simply in the original data, or were those classes decided on in this study	The classes come from the data, that is they are broad statements summarising data elements. For example, Floodplain and Non-Floodplain are deliniation of floodplain areas, Groundwater dependent and non-groundwater dependent are deliniation of vegetation based on their groundwater dependency from the data.	clarify in-text that classes originate from the data, but that the need to idententify water dependency was a pre-requisite for the study.
4	this study was the culmination of a series of other studies, but these studies (while referenced) are not discussed in the paper	I think we have a confusion here. Our landscape classification provided the means for the other works/studies to proceed. We refer to those studies in the **Discussion** to examplify how our work was used. That is what section "**Landscape classification based impact assessment**" (lines 355) describes. In lines 324-327 we clearly state: "However, the bioregional assessment program needed to assess impacts of coal resource extraction on ecological systems via a water pathway. Hence, we needed to develop an ecological landscape classification for this purpose that could service the different regions of the assessment." and lines 328 - 330 state: "While our spatially explicit landscape classification provided experts with the ability to readily identify cause and effect relationships between landscape elements and landscape hydrology, there are obvious differences between the landscape classifications in the three regions."	clarify in discussion: replace l356 with: "the reason for developing the landscape classification was to have a spatial canvas on which experts can base their assessment of risk from coal resource development on the ecology of a region via a water pathway"
5	much clearer methodology and workflow to be able to reproduce the results and to make the paper easier to read and understand	I think this is a good suggestion when taking together with the previous comments. I will endevour to provide a "visual" workflow in the introduction that outlines how the sections of this paper align with the methods/results/discussion and their purpose.	add a workflow figure to introduction

NR	Comment	Response	To do
6	Here is an example of some of the unclear discussion (l408 and further): "The modelling of risk to ecosystems at regional scale focuses on recognising which parts of the region are potentially impacted and which parts are unlikely to experience harm. Using our landscape classification as a crucial input, the modelling delineated impacted areas within each region, based on a zone of potential hydrological change." From this, I fail to understand how the classification was aa "crucial input" and how this assisted in delineating the impacted areas	In lines 371 to 407 we provide details on how the landscape classification is the input for the modelling in 3 steps. I am unsure how more specific I would need to be than "Nevertheless, each landscape classification provides a typology with an explicit connection of water to the landscape class. This connection enables a causal linkage between hydrological change in one part of the landscape and impact to ecosystems represented by landscape classes." (lines 335 - 337).	
7	There is an earlier reference to Hosack et al., is this the paper that describes the modelling? It would still be useful to help the reader understand what the modelling was (Summarising the earlier study) and highlighting how it was shown that the classification was a "crucial input"	Yes, Hosack et al 2018 is the work where experts rely on the landscape classification. We have summarised this work under the three steps in step 1 and 2. Hosack at al 2017 details the Bayesian methodology for incorporating and updating expert information via elicitation into risk assessments.	
8	Another example from the start of the methodology, where essentially the overall approach is summarised (l184..): "The purpose of this ecohydrological landscape classification is to characterise the landscape based on patterns in land use, ecology, geomorphology and hydrology, and from these, develop landscape classes of water-dependent, remnant and human-modified features. Existing spatial data for each region forms the basis for categorising the landscape features using a rule-set based on attribute features within the spatial datasets." The first problem I have is that why landscape classes of "water-dependent, remnant and human-modified features" are chosen doesn't seem to be explained. I can see that this is a useful classification, but at least some rational for the choice (and why no other classes) should be presented	This is outlined in section "Landform classification" (line 227ff). I think Willem is confusing landscape classes with landform classification; here landscape classes are the result of the classification, while landform classification is part of the processes to broadly divide the landscape into non-overlapping elements. Landform classification is a high level classification that describes the earth surface elements with a hydrological lense, that is three elements. We clearly justify our choices in lines 229 - 230: "Relatively intact areas are more likely to contain ecological assets such as species and ecological communities, than highly modified areas"; and lines 232 to 234: Landform classification determines "areas that are subjected to flooding, or that have persistent water, assists in identifying landscapes that support water-dependent habitat and vegetation, and aquatic ecosystems".	

NR	Comment	Response	To do
9	The second problem is the references to a "rule-set". I presumed this was going to be discussed later in the paper, but either I have totally missed it, or it is never discussed	Figures 2,4,5 summarise the resulting rule sets. Details for the rule sets are in line 200-226.	
10	There is further reference to the "rule-set" in l200 with no further explanation, simply a listing of the features (and again no explanation why these features were chosen)	lines 214 - 218 provide the rules set reasoning.	Clarify that features are contained within the publicly available region-specific datasets. We merely apply a prioritisation to those datasets in a GIS overlay to identify the spatially combined dataset of prioristised features.
11	There is subsequently mention of a "hierarchical approach, where hydrological features have priority…" (l215) but again no explanation how this priority is incorporated.	Hmmm, what am I missing here? Lines 218 to 221 clearly state the priorities.	
12	Comments in Manuscript		address in final version of paper
13	In my opinion the methodology is not well described and	This is an interesting comment given that 2 previous reviewers stated (1) "In general, it is well written and clear structured, the reasons why it was developed were given and three aims were defined: characterize the system at regional level, develop the system and ensure that the new developed system is able to fulfil its purpose (aiding in formulating conceptual models and patterns of water dependency across the landscape)", and "The paper is clear about what has been done and why, and the outcomes". See also the AC1 response.	Improve justifications/explanations for decisions based on above comments