

Review to the manuscript 'Large drainages from short-lived glacial lakes in the Teskey Range, Tien Shan Mountains, Central Asia' submitted by Chiyuki Narama et al. to the Natural Hazards and Earth System Sciences. I'm convinced that this manuscript might be of interest for readers of this journal.

General comments:

- 1) **Structure of the study.** Authors present original field data, analysis of RS data and outline implications for RS-based hazard identification. In order to make the manuscript more readable, I suggest to clearly separate: (i) descriptive part (past events; detection of potential lake basins, ...); (ii) implications for hazard identification and monitoring (geomorphological criterias for hazard identification, recommendations for monitoring, ...). These are mixed up in the current version of the manuscript.
- 2) **Terminology and language.** Some of the terms used sound bit unusual / clumsy to me, e.g., 'ice-containing debris-landform' – in this case I suggest to use 'ice-cored moraine complex'. Similarly, 'glacier-contact type' might be replaced by 'proglacial' and 'without glacier contact' by 'glacier-detached' (see also Emmer et al., 2015a); 'lake-basin depression' also sounds weird, what about to use 'potential lake basin' or simply 'depression' or 'hollow'; see also my specific comments; this should be unified within whole manuscript. Also, check correct use of present and past tense. Overallly, language need some polishing (see also my specific comments).

Specific comments and technical notes:

L18-L19: change wording to 'Four lake drainages from glacial lakes have occurred in the western Teskey Range, Kyrgyzstan, during 2006 and 2014'; check and edit similar cases in whole manuscript

L19: damages

L22-23: four events are mentioned at the beginning of an abstract and three are mentioned here; this is bit confusing and should be edited

L27: late summer

L29: freezing of outflow tunnel

L64-66: fromation and sudden drainage of supraglacial ponds were also documented from the Cordillera Blanca, Peru (see Emmer et al. 2015b)

L67-69: in my understanding, the term 'proglacial' fits there well (e.g., short-lived proglacial lake)

L87-104: please add some info on geological / geomorphological setting of the study area

L114-L117: what is the resolution / accuracy of these measurements

L118-119: please, provide more details on this investigation – what has been done and how ??

L137-138: these images are 7+ years old; considering high dynamic of studied entities, potential outdateding should be discussed

L149-150: please, provide more details on this investigation in methodology

L158-162: this is hard to follow; please consider graphical representation of these data

L165: replace 'lies' by 'is located' in entire manuscript

L166: replace 'undiscernible' by 'not recognisable' or something similar

L167: volume 163,000 m<sup>3</sup>

L169: consider replacing 'non-glacier-contact' by 'glacier-detached' (see Emmer et al., 2015)

L183: adjacent landform

L184: was found

L188-189: how do you know that ?? please provide more info on that

L191: delete 'much'; how much ice ?? please provide more info on that

L202-203: considering the growth of the lakes

L202-204: these growth characteristics better fit in 4.1

L208: ... those that discharge following different mechanism (e.g., dam failure)

L217-220: how was the flow speed in this case ?? please provide more info on that

L222: how much ?? please provide more info on that

L227-228: this is not understandable, please reformulate

L235: why to compare with Himalayas ?? examples from Tien Shan are more reasonable here

L263: does

L266: why is this sub-chapter placed in discussion section ??

L280-282: what process ?? please reformulate / explain

L286: replace 'here' by 'in this study'

L287-288: this might be due to the small events are not documented from Himalayas; please discuss that

L288-289: this is not necessarily true; e.g. in the Cordillera Blanca, most of the lakes which produced GLOF by moraine dam failure still exist

L286: replace 'like' by 'similar to'

L294: this implication is not clear to me, please explain

L302: delete 'much'

L304: Bolch et al. (2011) estimated ??

L311-312: check wording

L312-314: this is not understandable, please reformulate

L319-312: is this shown ?? at the same time, proglacial lake are also turning to glacier-detached phase (see also Emmer et al., 2016); please explain and discuss

L348: replace 'treat' by 'classify'

L362: 'debris-free drainage water', please explain

L363: delete 'the' before observed

L348: replace 'materials' by 'material'

L380-382: discussion or results ??

L383-391: discussion or results ??

L395: what is meant by 'monuments' ?? please explain

L400: term 'landform' is not fitting here well, please reformulate

L406: replace 'within' by 'up to'

L410-11: term 'one package of river basin' please reformulate

L418-419: ... tunnels, as a result of winter freezing ...

L425: (iii) no visible outflow channel

L435-447: these are implications / recommendations, not conclusions, please replace

Fig. 4: please replace the description of x (e.g., April, May, ...)

Fig. 6: please check figure heading (there are no red arrow or dashed region on my figure)

Fig. 8: replace 'prebious' by 'previous'

Fig. 10: replace 'current' by 'existing'

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To sum up, this study needs some improvements before can be published and, based on above mentioned, I suggest medium revisions. I'll be happy to review revised version. Please, do not hesitate to contact me in case of questions (aemmer@seznam.cz).

Kind regards

Adam Emmer

#### References:

Emmer, A., Merkl, S., & Mergili, M. (2015a). Spatio-temporal patterns of high-mountain lakes and related hazards in western Austria. *Geomorphology*, 246, 602–616.

Emmer, A., Loarte, E., Klimeš, J., & Vilímek, V. (2015b). Recent evolution and degradation of bent Jatunraju glacier (Cordillera Blanca, Peru). *Geomorphology*, 228, 345–355.

Emmer, A., Klimeš, J., Mergili, M., Vilímek, V., Cochachin, A. (2016): 882 lakes of the Cordillera Blanca: an inventory, classification, evolution and assessment of susceptibility to outburst floods. *Catena*, 147: 269-279. doi: 10.1016/j.catena.2016.07.032.