Writing a Conclusion

Use this worksheet to practice what is discussed in

- **Information Sheet 13: *Writing a Conclusion***

The information sheet on writing a conclusion contains eight elements readers might expect in a conclusion

a) Restate hypothesis
b) Summarize findings
c) Evaluate findings
d) Discuss implications
e) Consider findings within larger research area
f) Indicate limitations
g) Refer to possible future work
h) Leave a final message.

Task 1: Identifying the Elements

Read the following conclusion and identify the eight elements. The sentences have been numbered to aid answering. Conclusion from: https://doi.org/10.5194/hess-24-717-2020

Surface water as a cause of land degradation from dryland salinity

(1) This paper presents evidence that surface water flows play an important role in causing salinity in low-gradient drylands, conceptualising this as flow–fill–flood functional behaviour. (2) Much of the generation and internal redistribution of surface flows are not recorded at the long-term gauging location in this catchment area. (3) This masks the important role that (disconnected) surface flows have in this and other low-gradient dryland catchments, including as a contributor to land degradation by dryland salinity. (4) It is shown that surface flows fill landscape detention storages, and there is top-down recharge in these locations. (5) Inundation creates a potential for vertical diffusion of salts that can evapo-concentrate at the surface and degrade these areas or impact downstream systems when depression storage is exceeded. (6) The broad-based channel management intervention to address surface water processes and flow–fill–flood functional behaviour has been shown to increase water yield and to decrease the streamflow salinity and downstream salt yield.
(7) Catchments in the low-gradient drylands have elements of hydrological behaviour in common with high rainfall, steeper-sloped hydrologically connected catchments of the temperate, tropical and sub-tropical areas, but they are equally influenced by processes common with dry, flat and disconnected smooth plainlands, rangelands, semi-arid regions and deserts. (8) The new insight from the flow–fill–flood understanding of dryland salinity further demonstrates the importance of testing and reassessing how rainfall and topography interact across a range of settings in time and space to moderate hydrological processes. (9) It is critical to appreciate and question how catchment dynamics in the context of wet–dry, steep–flat, connected–disconnected and related surface and groundwater processes subtly driving hydrology and, in this case, land degradation by dryland salinity. (10) Successful management interventions need to address the specific causes of dryland salinity, but you cannot manage what you do not understand.

Possible Answers – your answers might differ

Element	Sentence number
a) Restating hypothesis	1
b) Summarizing findings	2,4,6
c) Evaluating findings	3,5
d) Discussing implications	7,8
e) Considering findings within larger research area	8,9
f) Indicating limitations	8
g) Referring to possible future work	9
h) Leaving a final message	10

Task 2: Forming an Opinion

Here is another conclusion. Which of the two conclusions do you prefer? Can you give any reason for your preference? There is no right answer for this task.
Conclusion from: https://doi.org/10.5194/hess-24-991-2020

Changing suspended sediment in United States rivers and streams: linking sediment trends to changes in land use/cover, hydrology and climate

Annual mean concentrations of suspended sediment largely decreased between 1992 and 2012 at 137 stream sites with watershed areas <300 000 km^2 across the US. Many of these decreases occurred at sites with some of the highest concentrations and at sites that drained watersheds with concurrent small-to-moderate increases in human-related land uses (i.e., urban and agricultural land uses), suggesting efforts to minimize sediment pollution to streams and rivers may be having the desired effect in some places. A notable exception to these decreases is a cluster of increasing TSS concentrations at undeveloped sites in the northwestern US. At 83 % of sites, a change in land management (including changes in land use/cover), as opposed to a change in the streamflow regime, was the primary contributor of changes in sediment, though systematic changes in the streamflow regime had a mild-to-moderate influence on sediment at 66 % of SSC sites and 57 % of TSS sites (Table 3). Across all sites, the median MTC was −23 % and −10 % for SSC and TSS trends, respectively, compared to the median QTC of −4 % (SSC) and −3 % (TSS) (Fig. 3). The influence of specific hydro-climatic changes on sediment trends appears to be masked due to more influential changes in land management. Sediment trends determined using TSS data were weakly correlated with potential causal variables, highlighting the difficultly of using TSS, as opposed to SSC, to infer potential causal relationships largely due to not only the unreliability of TSS for characterizing stream water quality but also differences in suspended particle-size distributions. While identifying the specific land use/cover or hydro-climate changes responsible for these sediment decreases remains a challenge, the strongest correlations tended to occur at sites with more homogenous, human-related land uses (i.e., agricultural and urban lands). At many sites, across all land use categories, decreases in sediment are likely due to changes in land management with changes in the streamflow regime providing a limited though important and often overlooked influence.