

Instructor perceptions on environmental impact in Porth yr Ogof

Isaac Ayres 1901487

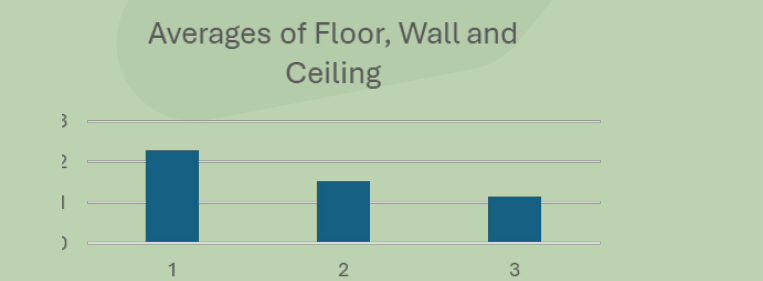


I confirm that I have not used any AI tools in the research and creation of this assignment. I confirm that I have not presented any AI generated materials as my own work. I confirm I have copies of my drafts, notes, and other resources I used, which I may be asked to provide in evidence.

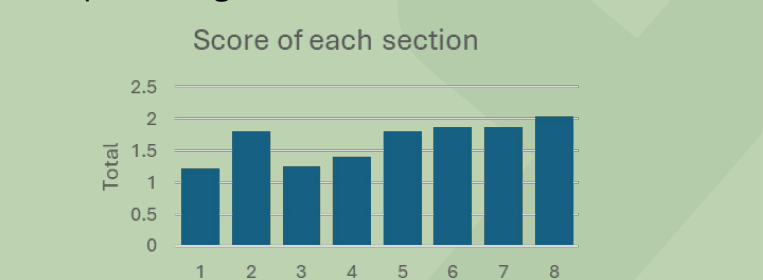
- Research Problem
- Caves are a fragile environment. (9,2,6)
 - Recreational use causes visual changes (4)
 - Porth yr Ogof (PYO) is the most visited cave in Wales, especially with instructed groups. (5)
 - People perceive their individual impact on the environment differently. (7, 8)
 - People perceiving their attitudes towards LNT to be more effective than they are. (7, 8)
 - A lack of research identifies the audience of the recreational cave users, and environmental data in South Wales cave environments
 - The aim of this research is to identify how outdoor instructors perceive their impact during their cave sessions, and to test how accurately their perceptions match with survey scores from the CIARS (1)

- Research Design and Methods
- Mixed method approach, qualitative or quantitative only allows one way of classifying data (3). By using both, there is data to compare with and draw conclusions from.
 - 5 BCA qualified cave leaders were interviewed for 15 minutes.
 - These were semi-structured interviews. Regarding their experience leading groups in PYO, and their perception on personal and other instructors' impact on PYO.
 - CIARS was used to analyse the environmental impact on PYO.
 - Data was gathered and presented using averages found doing descriptive analysis

- Research Findings
- The CIARS (1) was used to score the cave using numerical data taking averages to understand each sections impact.
 - Cave was split into 8 sections
 - Each section was categorised into floor, wall and ceiling
 - Each category had different criteria scored 0-3, from non-visible (0) to severe (3) visual impact.



- 1, 2 and 3 represent the floor wall and ceiling respectively.
- The floor scores highest with a severe visual impact rating at 2.3 out of 3



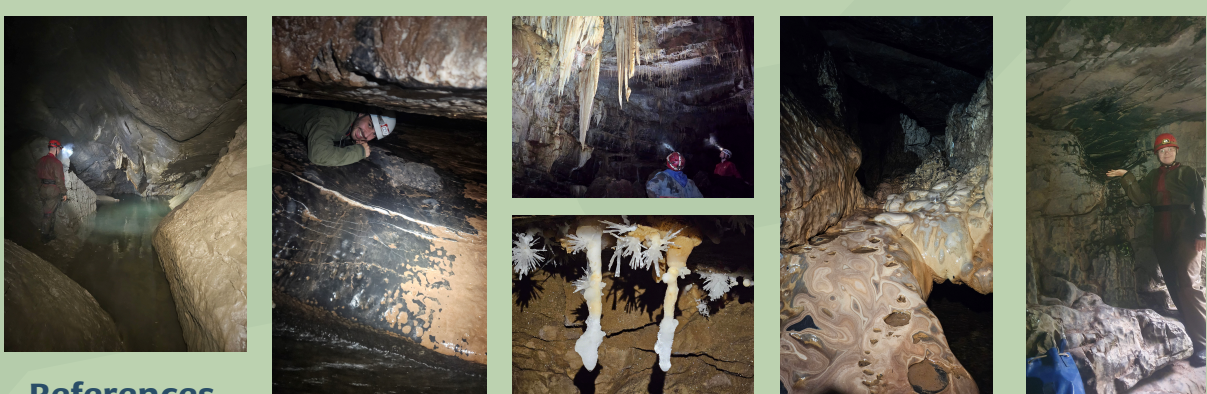
- 1-8 represent each section of cave, with the maze scoring the most with a severe visual impact, 2 out of 3
- The least visual impact was the main entrance scoring a light visual impact at 1.2 out of 3

- Themes
- NVIVO was used to find similarities to group into themes
 - Two common themes were identified.
- River

Recreational
- Both themes often linked back to the river.
- The main feature of the cave is the great big river that floods after rainfall. The consensus was that the river washes away a lot of the human impact in the wetter areas.
 - The other was the footfall from recreational groups and members of public wandering in. The consensus was that the areas of the cave where the river doesn't reach seemed to have more of a visual disturbance.

- Conclude findings
- Instructors believed the river made for less human impacted visual disturbances.
 - This correlates with the scores for the wet cave areas like the main entrance and upper stream passage (1 and 3) consistently scoring less than dry areas like the mud chamber and the maze (2 and 8).
 - Some comments mentioned lesser visited dry caves appeared worse than PYO. Often referring to Eglwys Faen.
 - This study confirms that instructors understand the impact recreational use has in PYO and other group caves in South Wales, their perceptions on the cave environment matched the data gathered from the CIARS.

- Future Implications and Research
- Discussions surrounding the river made for the judgement that PYO is the perfect group cave due to the river carving out areas people use, to negate human impact.
 - Sacrificial cave was mentioned amongst the instructors. By avoiding other caves and keeping most group sessions in PYO it is actively protecting these precious eco-systems around South Wales.
 - Some other themes opened up discussion for future research, these were:
 - Using CIARS to compare different caves (active and non active).
 - Comparing CIARS with other environmental analysis tools.



References

1. Bunting, B. and Balks, M.R., (2001). A quantitative method for assessing the impacts of recreational cave use on the physical environment of wild caves. Australasian cave and karst management association journal, 44, pp.10-18.
2. Gillieson, D.S., (2011). Management of caves. Karst management, Springer, Dordrecht, pp. 141-158.
3. Gorard, S. and Taylor, C., (2004). Combining Methods in Educational and Social Research. McGraw-Hill Education (UK).
4. Huddart, D., (2019). Caving. Outdoor Recreation: Environmental Impacts and Management, Cham: Springer International Publishing, pp. 299-329.
5. Ogof (2018) Porth Yr Ogof, Available at: <http://www.ogof.org.uk/porth-yr-ogof.html>, Accessed: 04/03/2026
6. Oliveira, L.F., Ferreira, R.L., Fernández, J.I.R. and Souza Silva, M., (2022). Recreational caving impacts of visitors in a high-altitude cave in Bolivian Andes: main effects on microhabitat structure and faunal distribution. International Journal of Speleology, 51(2), pp. 93-103.
7. Sandell, K. and Öhman, J., (2013). An educational tool for outdoor education and environmental concern. Journal of Adventure Education & Outdoor Learning, 13(1), pp.36-55.
8. Simon, G.L. and Alagona, P.S., (2009). Beyond leave no trace. Ethics Place and Environment (Ethics, Place & Environment (Merged with Philosophy and Geography)), 12(1), pp.17-34.
9. Spate, A. and Hamilton-Smith, E., (1991). Cavers impacts-some theoretical and applied considerations. Proceedings of the 9th Australasian Conference on Cave and Karst Management, Margaret River, Western Australia, pp. 20-30.