

An underwater scene with a deep blue color palette. Light rays and bubbles are visible, creating a sense of depth and movement. The text is overlaid on the left side of the image.

# **Extreme Sport and Information: Initial Findings of Technical Cave Diver's Information-Seeking Behaviours**

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# Introduction

**Stebbins (2009) defines serious leisure as the term given to niche activities, "which involve significant personal effort based on specially acquired knowledge, training, experience or skill" (p. 625).**



Shek Exley, pioneer of safe cave diving practices.

Image [source](#).



# Why Cave Diving?



# Why Cave Diving? (Really)

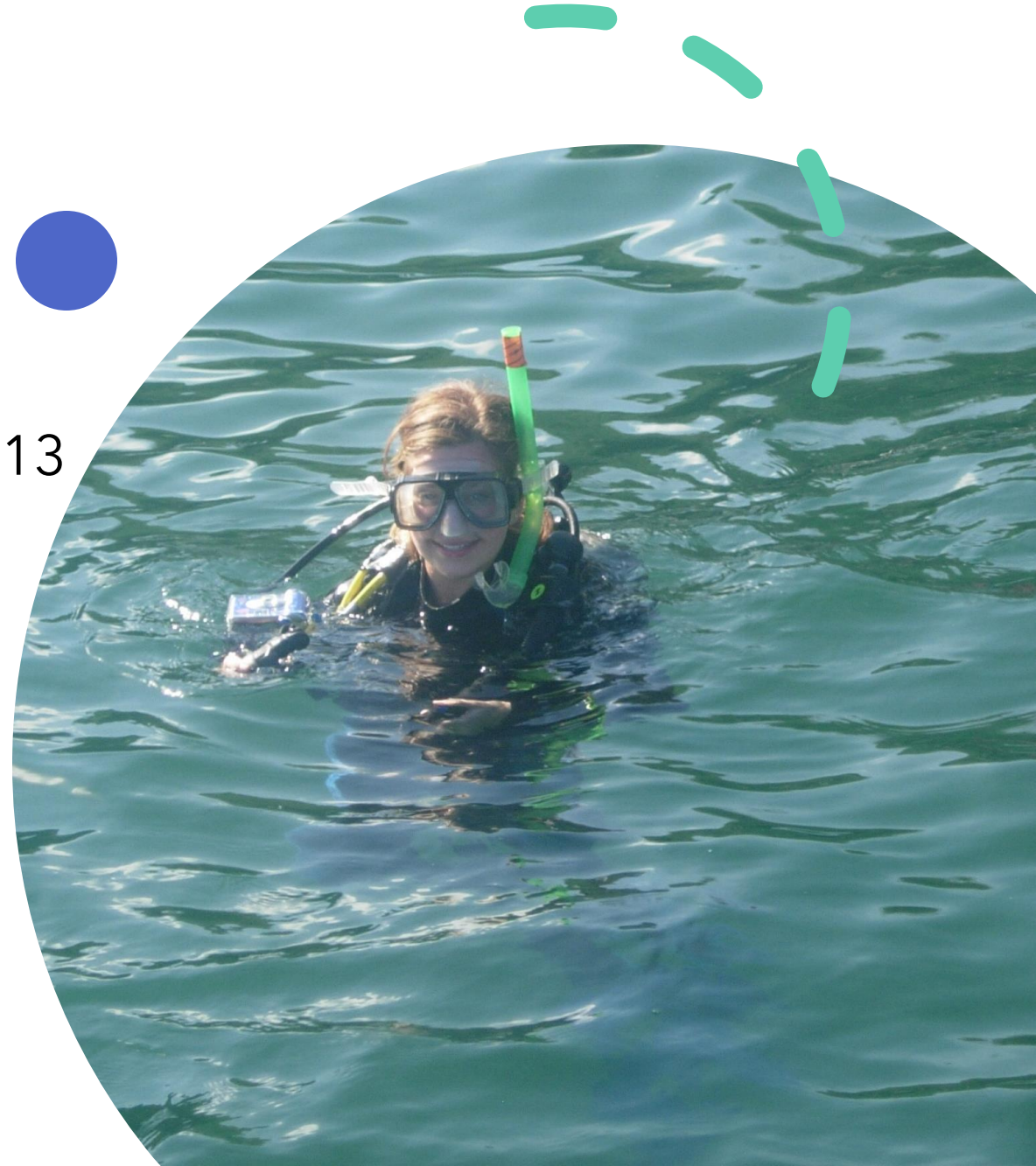
Extreme or high-risk sports are defined by Breivik (1999) as, "all sports where you have to reckon with the possibility of serious injury or death as an inherent part of the activity."



Lavolette (2007) explains an appeal of high-risk sports derives from "individually confronting risk" (p. 2) by pitting an individual against a risky environment and overcoming fear.

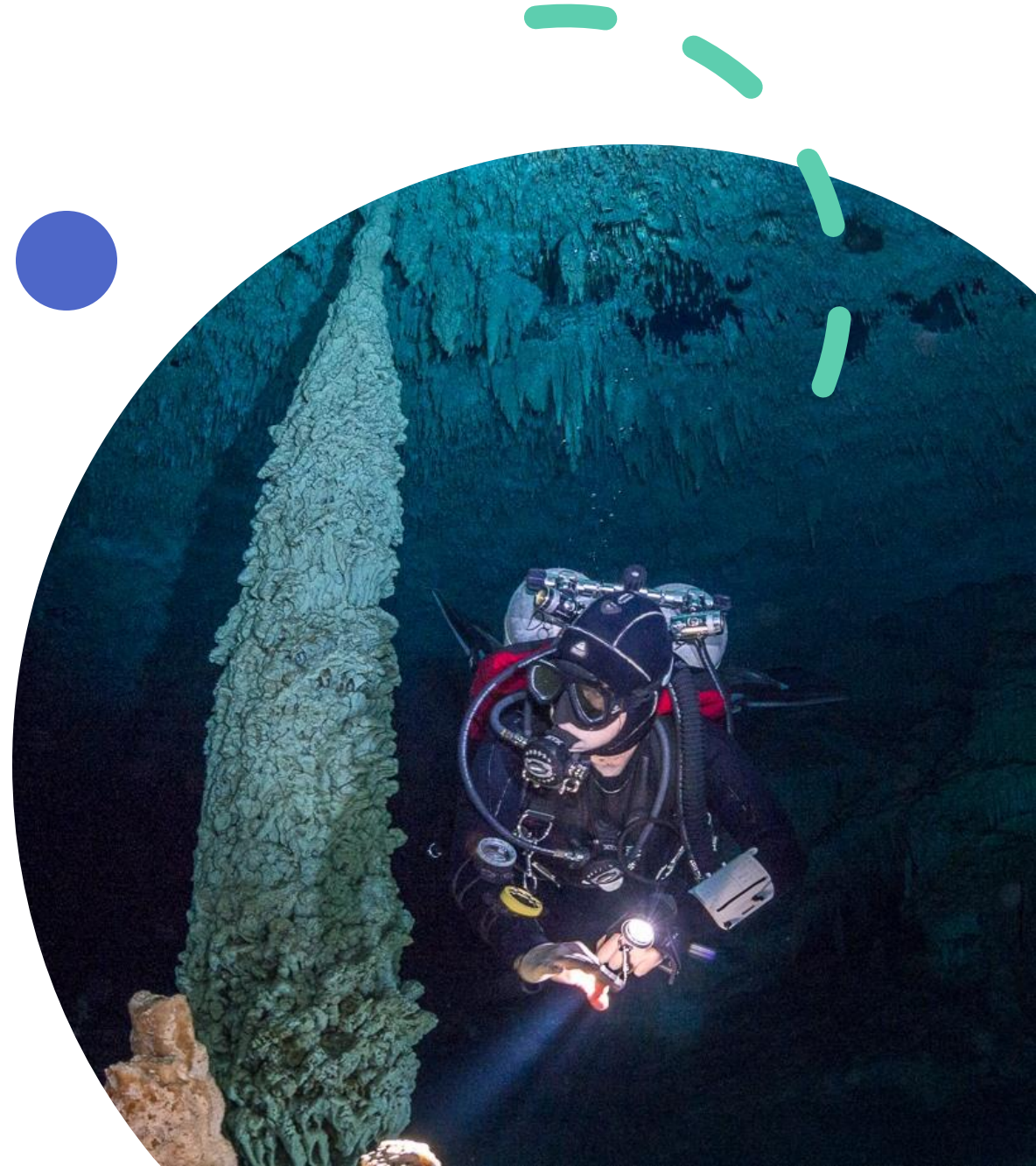
# My Diving Background

- PADI "Scuba Diver" - 2007
- PADI Open Water Diver - 2011
- PADI Advanced Open Water Diver - 2013
- PADI Enriched Air Diver - 2014
- PADI Rescue Diver - 2014



# Welcome to the Dark Side...

- TDI Cavern Diver - 2017
- TDI Tech Diver - 2017
- TDI Intro to Cave - 2018
- TDI Full Cave - 2018





# Human Information Interaction

**Contemporary HII scholars, including Kari and Hartel, have advocated for research in serious leisure to increase, "...because of the importance of these pleasurable activities to everyday life experience" (as cited in Robinson & Yerbury, 2015, p. 591).**





# Sport & Information Behaviour Research

Interpersonal relationships and social media are important sources of information in sport and active leisure.

- Hungenberg, Ouyang, and Gray (2019): "Adventure tourism"
- Bergstrom and Neo (2020): Hai'kū Stairs
- Gorichanaz (2017): Ultramarathon runners
- Yamashita (2022): "Sports tourists"

# Research Methodology

The study uses the Information World Mapping technique developed by Greyson, O'Brien and Shoveller. This methodology uses a participatory art-based technique for conducting information behaviour interviews. The technique encourages participants to both draw their information seeking pathways and at the same time talk through their process.

Greyson, D., O'Brien, H., & Shoveller, J. (2017). Information world mapping: A participatory arts-based elicitation device for information behavior interviews. *Library & Information Science Research*, 39(2), 149-157.



**Call for Volunteers!**

**ARE YOU A FULL-CAVE CERTIFIED CAVE DIVER OVER 18 YEARS OF AGE? IS CAVE DIVING A HOBBY OR A PASSION OF YOURS? WE'D LOVE TO HEAR FROM YOU!**

**PARTICIPANTS NEEDED FOR RESEARCH IN THE INFORMATION-SEEKING BEHAVIORS OF CAVE DIVERS**

If you volunteer to be in this study, your participation will consist of a one-hour long arts-based interview held virtually to learn about the information-seeking behaviors of cave divers. These interviews will be conducted in English.

To participate in this study, you must have completed a Full Cave certification, such as with TDI or an equivalent company, and provide proof of completion (such as a certificate or membership card). You should be a "recreational" or amateur cave diver, not a professional.

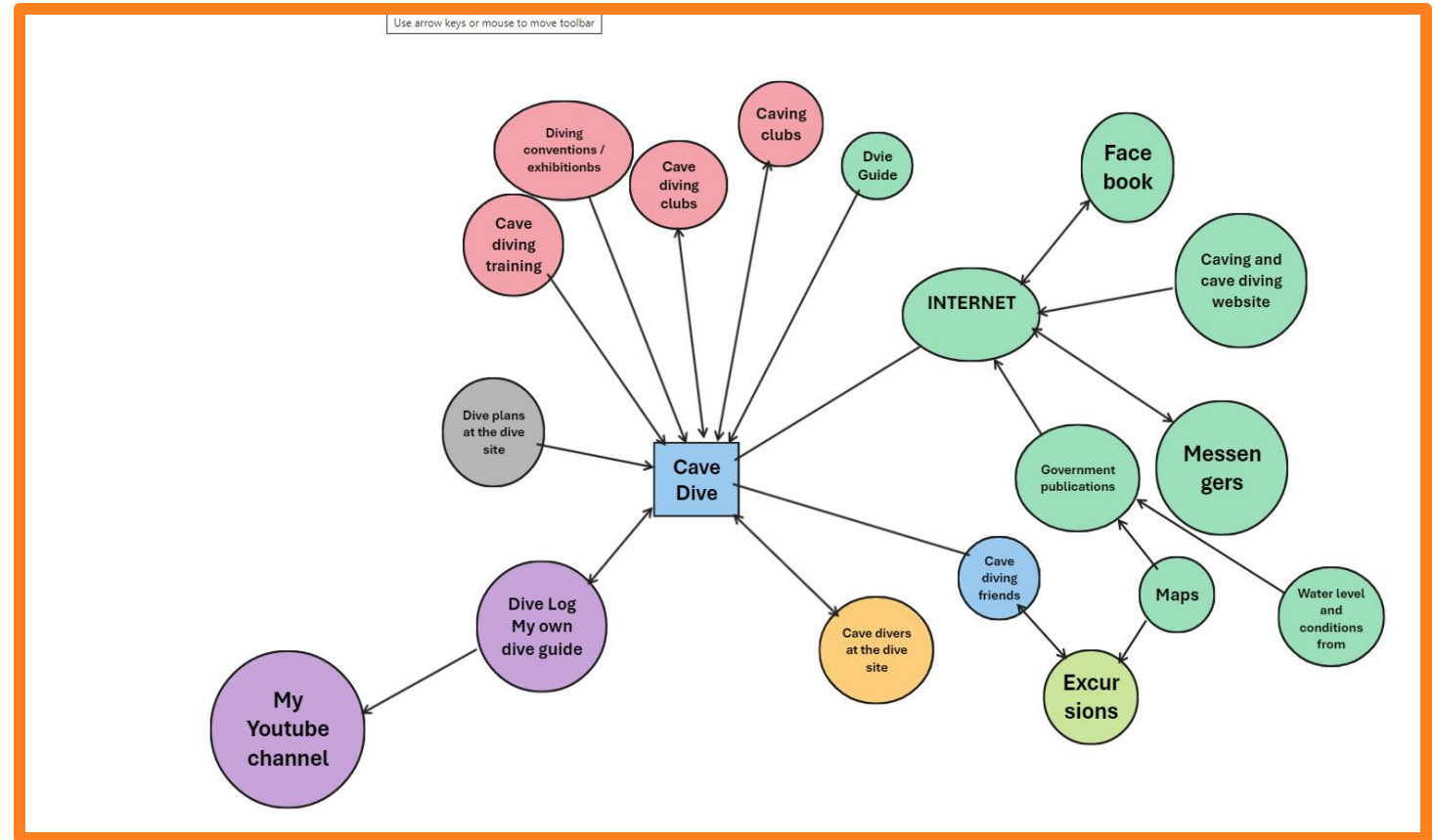
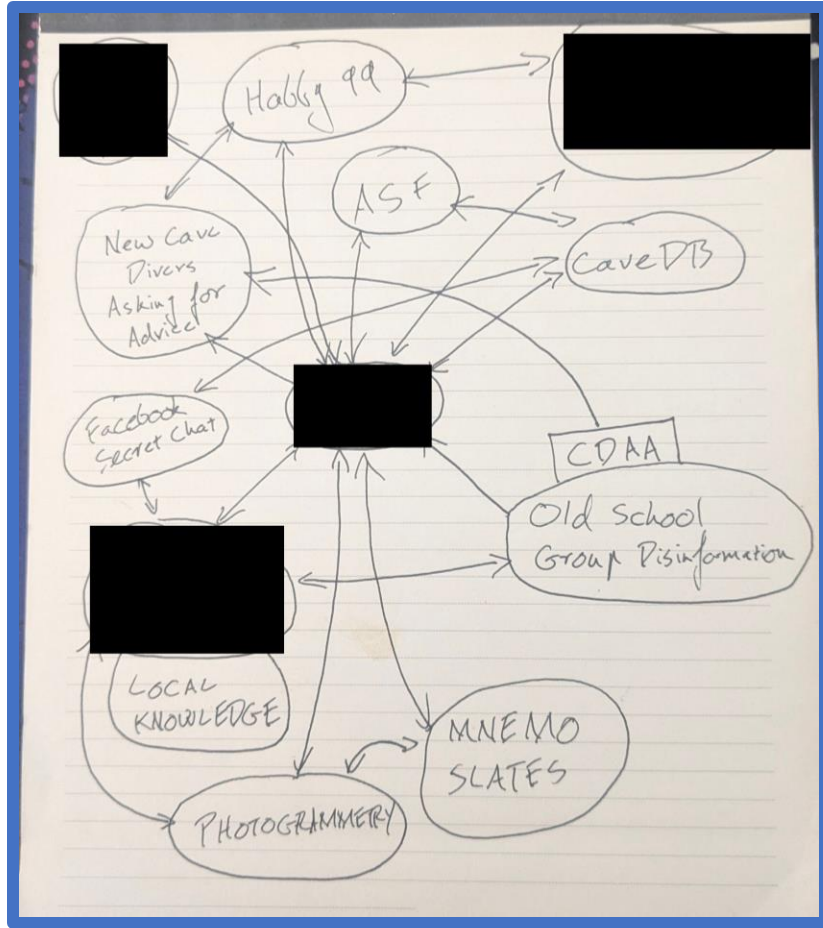
**MORE INFORMATION:**  
Contact: Toni Beaton  
Email: tn228036@dal.ca



# Recruitment & Participant Criteria

- 20 participants
  - 6 female-presenting
  - 14 male-presenting
- International representation
  - Australia
  - Canada
  - Denmark
  - Germany
  - Mexico
  - Switzerland
  - The United States

# Data Collection



# Data Analysis

used this method, take it quite literally and draw a picture. Some people just use words and make it more of like a mind map or a word cloud sort of thing with lots of arrows here or there. So, no right way or wrong way, no prescriptive way to do it.

Participant 1  
Alright, well I could probably describe to you, like, how I plan a dive.

Lead Researcher  
Yeah. Perfect.

Participant 1  
That's probably the best way to go about it. **Probably the best way is I'm looking on the Internet as far as sites like, you know, YouTube. You know, what's it called? Uh, you know, Facebook. You know, they typically show pictures, "Hey, here's a cool place to go," and you know, it gives you a good idea of what's out there.**

**And then my next resource for that is I look for maps.** You know Florida, you know we we're not quite as you know, we don't have too many.... What's it called? Caves to dive. So, we have, you know, **it's a lot easier for us to get maps!** Uh, and from there that gives me a good idea. OK. You know, I'm taking a left here, right here, jump here. You know, it's all kinds of stupid stuff. **And then I actually go back to YouTube.** You know, I go back to sites like YouTube and all that to get a general idea of what that area of the cave is like, is it a backmount area? Is it sidemount area? Is it silty? Is it flow? You know, what type of concerns would I have?

**And then also I will ask locals.** Yeah, you know, like [NAME] at Cave Country [dive shop], he's very helpful for that kind of information because he's been here since the beginning. You know, the joke is, you know, [NAME] made [NAME]'s sidemount rig for \$2000 [laughs]. So and then, you know, go locals like [NAME] in or that, you know **NSS-CDS [National Speleological Society-Cave Diving Section].**

And so then, from there, **I dive it.** You know, I'll go through if there's multiple jumps, you know, I will go into the water and... what's it called. Legs. Fins... **And I'll just dive it and see.** OK, **do one jump, another jump.** And basically, you know, do it as **safely** as possible.

Yeah, it's typically how I get most of my cave dive information. **You do get some tips,** I don't get as much because I dive during the week so we don't have... it's not as busy. I also set up an area that's pretty far away from most other people [laughs]. **And so, I don't really talk to people. It's both a blessing and a curse.** It's, you know, lately while I was doing the DPV class, I had to set up in an area where the instructor is first... being where everyone is. And I did some dives with people and it's like... you spend like 2

web-based information seeking

usually with intentionality or specific info seeking

person-to-person info seeking

types of information sought after in the planning stage

local dive agencies/organizations

concept of gathering information by diving

select time to ask locals for information; more of an urgency to start diving at the site

maps as info sources)

exploratory information seeking

obtaining information experientially

dive planning

Internet

YouTube

Facebook

intentional info seeking

use of access (to maps)

specific Q's when planning a cave dive

locals

person-to-person

NSS-CDS

"just dive it"

safety

tips

talking to people

rustled information

notebook

lines

"vetting"

sited info/communities

wasted people

"small word"

risk tolerance

Facebook groups

self-reliance

directional cave markers

trust

info sharing restricted to local community

private vs. open messaging

cliques

unsolicited "advice"

team communications

memory

information overwhelmed

psychological limits

anxiety

cave divers

cave instructors

non-cave divers

conferences

podcasts

shows

Google

dive shop websites

TDI website

GDI website

accident analysis

non-confrontational

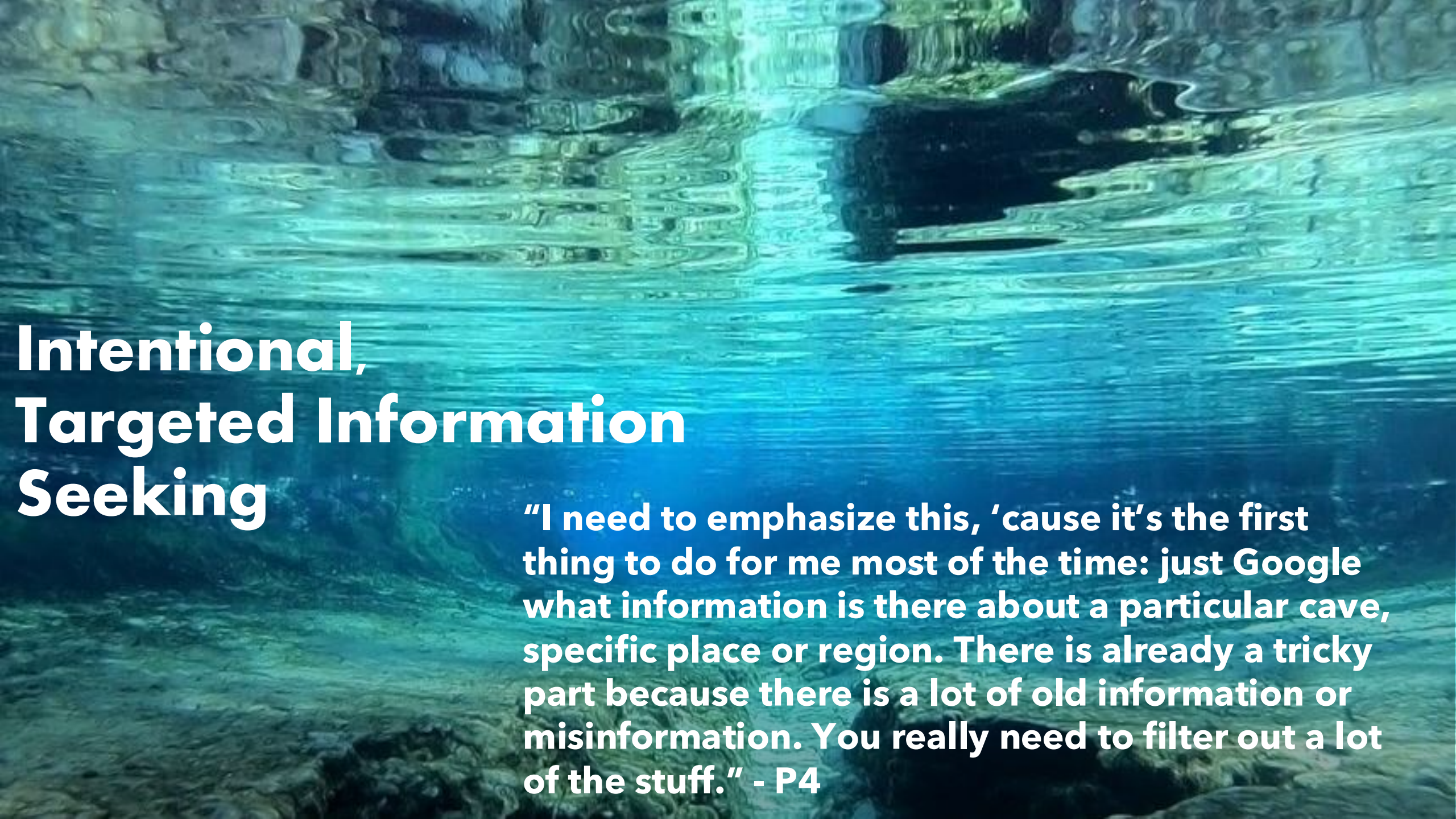
cookies

arrows

picky re: dive buddies



# Identified Themes and Early Results

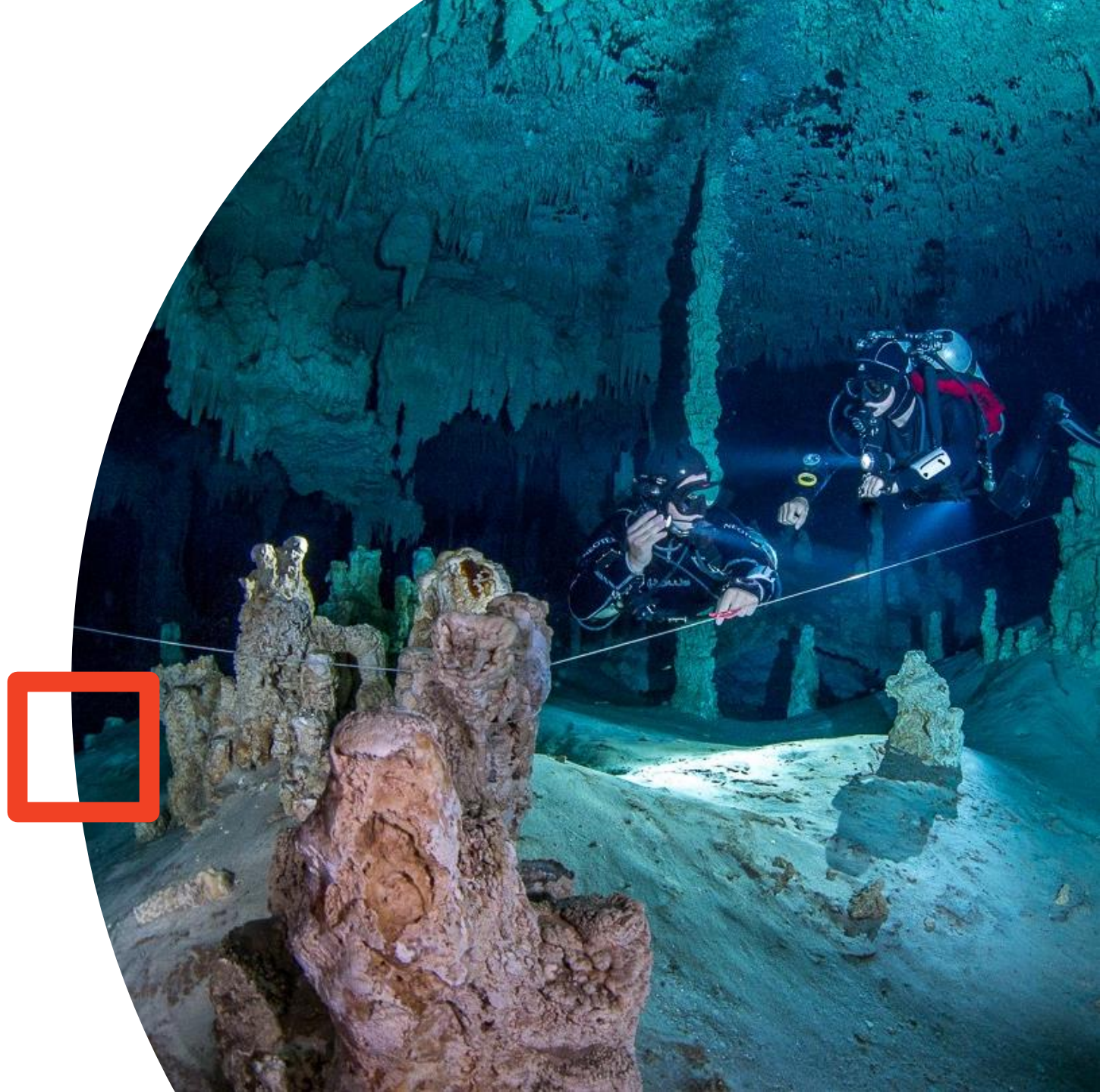
An underwater photograph showing a person's legs and feet in a pool of clear, blue water. The person appears to be standing on a rocky or sandy bottom. The water is bright and clear, with some ripples and reflections. The overall scene is serene and natural.

# **Intentional, Targeted Information Seeking**

**“I need to emphasize this, 'cause it's the first thing to do for me most of the time: just Google what information is there about a particular cave, specific place or region. There is already a tricky part because there is a lot of old information or misinformation. You really need to filter out a lot of the stuff.” - P4**

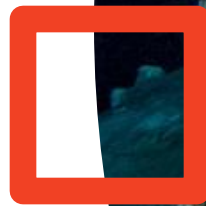
# Person-to-Person Information Exchanges

**"At this level of cave diving, you're generally going to be vetting anyone that you come in contact with. It will become very apparent very quickly through verbal and nonverbal vetting, whether or not that's someone that I would feel comfortable at least doing some initial exploratory, see-how-the-dynamic-works type dive." - P11**



# Person-to-Person Information Exchanges: Vetting

**"If I haven't dove with a person before, I'm way more conservative about how far we go in and what we do. If you and I were doing a dive right now, I wouldn't want to do jumps. I would want to stay mainline. I would communicate that." - P15**





# Experiential Information Gathering





## Embodied Information Gathering

**"When you're actually in a cave, if you're not in the moment, you're potentially in deep trouble. For that... [time] you're in that cave, you are doing that thing because if you're not, you're potentially putting yourself and everyone else at risk. It's very focused for the time that you're doing it." - P17**



# **The Avoidance of Becoming "Information Overwhelmed"**

**"In general, I don't take a lot of information on the dive. If navigation is really complex, I might write it down, but in general I'm not doing very complex navigation in a place I've never been before. I kind of think if you need to rely on information that's written down, you maybe shouldn't be doing the dive." - P2**



# STOP

**PREVENT YOUR DEATH!  
GO NO FARTHER.**

**FACT:** More than 300 divers, including open water scuba instructors, have died in caves just like this one.

**FACT:** You needed training to dive. You need cave training and cave equipment to cave dive.

**FACT:** Without cave training and cave equipment, divers can die here.

**FACT:** It CAN happen to YOU!

**THERE'S NOTHING IN THIS CAVE WORTH DYING FOR!  
DO NOT GO BEYOND THIS POINT.**

A Diver Safety Message From:  
NACD • NSS-CDS • PADI

This and other signs have been installed in caves for your safety. Please Heed them!

Printing Courtesy of the:  
National Speleological Society - Cave Diving Section, P.O. Box 950, Branford, Florida 32008-0950

## Information as a Safety-Oriented Practice

"I don't do it for high risk. I do it for low risk, and it's extremely meditative for me. Everyone has to evaluate their own risk-reward decisions profile, and what you're comfortable with doing. I don't think in all my years of diving I've ever done something for the excitement of it. Not once. Doesn't even enter my mind." - P11

Image [source](#).

*Information is integral to the sport of cave diving, acting as an indispensable part of the equipment and critical to the relationship between divers and the environment.*



# Interesting “Cookies” to Follow...

- Gender imbalances
- Geographic differences
- Generational differences
- Public perception



# Extending our Results Beyond the Cave

**"There's old mountaineers  
and there's bold  
mountaineers. There's no old,  
bold mountaineers. That  
works the same for cave  
diving." - P15**



- Bergstrom, K., & Neo, R. (2020). Searching for the stairway to heaven: Information seeking about an illegal hiking trail in Hawai'i. *Leisure Studies*, 39(5), 751-764. <https://doi.org/10.1080/02614367.2020.1770844>
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. <https://doi.org/10.1191/147398706qp063oa>
- Breivik, G. (1999). Empirical studies of risk sport. Oslo: Norges idrettshøgskole, Institutt for samfunnsfag.
- Chatman, E. A. (1999). A theory of life in the round. *JASIS*, 50(3), 207-217. <https://www.proquest.com/docview/231397230?sourcetype=Scholarly%20Journals>
- Cohen, R., Baluch, B., & Duffy, L. J. (2018). Defining extreme sport: Conceptions and misconceptions. *Frontiers in Psychology*. <https://doi.org/10.3389/fpsyg.2018.01974>
- Dervin, B. (1998). Sense-making theory and practice: An overview of user interests in knowledge seeking and use. *Journal of Knowledge Management*, 2(2), 26-46. <http://doi.org/10.1108/13673279810249369>
- Given, L. M., Opryshko, A., Julien, H., & Smith, J. (2011). Photovoice: A participatory method for information science. *Proceedings of the American Society for Information Science and Technology*, 48. <http://dx.doi.org/10.1002/meet.2011.14504801209>
- Gorichanaz, T. (2017). The information of story: The genre and information activities of ultrarunning race reports. *Aslib Journal of Information Management*, 69(4), 460-474. <https://doi.org/10.1108/AJIM-03-2017-0071>
- Greyson, D., O'Brien, H., & Shoveller, J. (2017). Information world mapping: A participatory arts-based elicitation device for information behavior interviews. *Library & Information Science Research*, 39(2), 149-157. <https://doi.org/10.1016/j.lisr.2017.03.003>
- Hertzum, M. (2016). Collaborative information seeking and expertise seeking: Different discourses about similar issues. *Journal of Documentation*, 73(5), 858-876. <https://doi.org/10.1108/JD-04-2016-0053>
- Hungenberg, E., Ouyang, L., & Gray, D. (2019). Measuring the information search behaviors of adventure sport tourists. *Event Management*, 23, 75-91. <https://doi.org/10.1080/10413209808406392>
- Lavolette, P. (2007). Hazardous sport? *Anthropology Today*, 23(6), 1-2. <https://doi.org/10.1111/j.1467-8322.2007.00545.x>
- Narayan, B., Case, D., & Edwards, S. L. (2011). The role of information avoidance in everyday life information behaviors. *Proceedings of the American Society for Information Science & Technology*, 48(1), 1-9. <https://doi.org/10.1002/meet.2011.14504801085>
- Robinson, J., & Yerbury, H. (2015). Re-enactment and its information practices; Tensions between the individual and the collective. *Journal of Documentation*, 71(3), 591-608. <https://doi.org/10.1108/JD-03-2014-0051>
- Ryan, G. W., & Bernard, R. (2003). Techniques to identify themes. *Field Methods*, 15(1), 85-109. <https://doi.org/10.1177/1525822X02239569>
- Savolainen, R. (2020). Manifestations of expert power in gatekeeping: A conceptual study. *Journal of Documentation*, 76(6), 1215-1232. <https://doi.org/10.1108/JD-01-2020-0010>
- Stebbins, R. (2009). Leisure and its relationship to library and information science: Bridging the gap. *Library Trends*, 57(4), 618-631. <https://doi.org/10.1353/lib.0.0064>
- Yamashita, R. (2022). A quantitative scoping review of information search behaviour in sport tourism. *The Journal of Sport Tourism*, 26(4), 363-386. <https://doi.org/10.1080/14775085.2022.2098807>



**Questions?**

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