

**Exploring Uncharted Territory in an Adventure-Diving Game:
A Framing Analysis of *Subnautica*'s Ecological Dead Zone, the Surrounding Online
Player Discussions and User-generated Content**

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Abstract

The popular underwater-exploration game *Subnautica* has fostered an active online fan community. The game includes a border-area, called the ecological dead zone. This paper leverages a multimodal framing analysis of *Subnautica* to examine its potential for communicating the environmental issue of ecological dead zones through this environment. The analysis investigates three key aspects: the game's design of the dead zone, online player responses and user-generated content focused on this area. While the in-game portrayal of the dead zone is inaccurate and players often neglect it due to the lack of resources, the analysis reveals the potential for *Subnautica* to spark interest on ecological dead zones within the fan-base. Platforms like Reddit, Wikis and YouTube can become spaces where conversations about environmental phenomena like dead zones emerge. Even though *Subnautica* circulates around economic ideologies, instead of ecological ones, this analysis highlights the potential of video games to act as foundations for raising environmental awareness, especially when guided by facilitators who encourage critical thinking about environmental themes in games.

Keywords

Video games, environmental communication, framing, sublime, benign masochism, user-generated content, ecocriticism, mesocosms

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Introduction

A Google image search for “ecological dead zones” reveals a significant presence of results related to the fictional ecological dead zone from the game *Subnautica* (2018).¹ Notably, also the first search result directs to the Subnautica-Wiki, preceding the actual Wikipedia entry for “dead zone (ecology).” This indicates an active *Subnautica*-fandom which continues to generate content about this fictional zone. This is problematic because the fictional “dead zone” dominates a large part of the search results, which potentially overshadows the real-world issue and creates a disconnect between the game’s portrayal and the true environmental threat caused by climate change. However, *Subnautica*’s construction of the dead zone and related online player discussions offer valuable insights. By analysing how players experience the ecological dead zone, this study can reveal how they connect it to dead zones on Earth.

Jesse Peterson argues that popular discourse on this phenomenon of environmental collapse in marine systems, consists of the repetition of the narrative that dead zones are synonymous with complete ecological collapse.² However, in reality, dead zones are areas in the ocean with very low oxygen, caused by excessive nutrients leading to algal blooms. This harms marine life and results in unproductive oceans for humans.³ Yet, in popular discourse, this collapse is primarily framed in terms of this lost economic value. The collapse is hence socially, culturally and economically constructed. Consequently, it is socially relevant to study how *Subnautica* corresponds with the real-world discourse around oceanic dead zones. This paper therefore seeks to answer the following research question: “How does *Subnautica* frame the ecological dead zone and how do players interpret and (re)frame the area in online user-discourses?” In order to focus on the game, online user-discourse and user-generated content, the paper explores the following sub-questions:

1. How does *Subnautica* construct and frame the ecological dead zone and how does the area defamiliarize players’ role in the other biomes?
2. How do players cognitively and emotionally respond to the ecological dead zone and how do they discuss their experiences online?
3. How do players (re)frame the ecological dead zone of *Subnautica* through user-generated content?

¹ Unknown Worlds Entertainment (2018), *Subnautica*, [Nintendo Switch, PlayStation 4, PlayStation 5, Xbox One, Microsoft Windows, Mac OS], Unknown Worlds Entertainment.

² Jesse Peterson, “Are Dead Zones Dead? Environmental Collapse in Popular Media about Eutrophication in Sea-based Systems,” in *The Discourses of Environmental Collapse: Imagining the End*, ed. Alison E. Vogelaar, Brack W. Hale and Alexandra Peat (London: Routledge, 2018), 32-47.

³ Peterson, “Are Dead Zones Dead?” 36-37.

To address these questions, this research applies a multimodal framing analysis. The multimodal-aspect acknowledges the diverse content types through which players engage with and respond to *Subnautica*'s ecological dead zone.

Academic Relevance

Regarding previous studies on ecological games, the biomes of *Subnautica* and its dead zone connect to what Alenda Y. Chang refers to as mesocosms.⁴ Despite the presence of the unique micro-ecosystems, a review of relevant academic literature reveals a limited focus on these environments in the game. Although the recent volume *Ecogames* mentions the game in two chapters, these discussions focus primarily on its popularity as a diving game or analyse the specific mechanics fish consumption.⁵ Evidence of the oversight can also be found in the work of Abraham Benjamin, who argues that *Subnautica* simply follows the footsteps of *Minecraft*, and thus similarly as other survival-crafting games, perpetuates capitalistic ideologies.⁶ Yet, *Subnautica*'s dead zone which does not carry out the same rhetoric of exploitation, is overlooked by Abraham. The game thus presents a highly relevant case study to explore such environments. Moreover, by focusing on this game-boundary, this study aims to contribute to the limited discussions of 'walls' in games. Notably, while Bryan Wuest's work of "Invisible Walls" explores spatial limitations in games, his focus on specific case studies leaves room for further investigation into the boundary in *Subnautica*.⁷ This research therefore seeks to extend existing research on boundaries in videogames, as well as Abraham's research on ecological games through the incorporation of the dead zone.

In order to do so, this research includes a reception study like the one performed in "The Underrealized Ecocritical Potential of *ABZÛ*," and applies it to different types of material.⁸ First of all, this study focuses on the framings used by *Subnautica* to create the ecological dead zone. This aspect makes use of the notions of procedural representation and rhetoric, defamiliarization and mesocosms. Then, the online player-discussions are analysed

⁴ Alenda Y. Chang, *Playing Nature: Ecology in Video Games* (Minneapolis: University of Minnesota Press, 2019), 17-20.

⁵ Gabrielle Trépanier-Jobin, Maeva Charre-Tchang and Sylvia Largeaud-Ortega, "The Underrealized Ecocritical Potential of *ABZÛ*," in *Ecogames: Playful Perspectives on the Climate Crisis*, ed. Laura op de Beke, Joost Raessens, Stefan Werning and Gerald Farca (Amsterdam: Amsterdam University Press, 2024): 311-332. Hans-Joachim Backe, "Between the Lines: Using Differential Game Analysis to Develop Environmental Thinking," in *Ecogames: Playful Perspectives on the Climate Crisis*, ed. Laura op de Beke, Joost Raessens, Stefan Werning and Gerald Farca (Amsterdam: Amsterdam University Press, 2024): 109-127.

⁶ Benjamin Abraham, *Digital Games After Climate Change* (Cham: Springer International Publishing, 2022), 61-88.

⁷ Bryan Wuest, "Invisible Walls: Narrativizing Spatial Limitation in *Ico* and *Assassin's Creed 2*," in *Mediascape* (Fall 2013).

⁸ Trépanier-Jobin et al. "The Underrealized Ecocritical Potential of *ABZÛ*," 311-332.

and connected to the concepts of the natural sublime and benign masochism, as elaborated in the theoretical framework below. Finally, the study turns to so-called paratexts of a Wiki-page, fan-made maps and a let's play video. However, before these analytical chapters, this paper further introduces the case study, places this research in a theoretical framework and explains the methodology of a framing analysis in further detail. The research finally concludes by answering the research questions and critically reflecting on the selected corpus and method.

Case Study

Subnautica, developed by Unknown Worlds Entertainment, first launched in Early Access on Steam in 2014, and had its full release in 2018. As a first-person open-world exploration game, *Subnautica* puts players in the role of a sole survivor from a crash on water-planet 4546B.⁹ Here, players discover different biomes, which are ecosystems which contain unique sets of plants, resources and creatures (Figure 1). These vary from small and harmless fish to aggressive Leviathans. While players explore, they receive information on their PDA (personal digital assistant) and uncover the plot of what is happening to 4546B. Hereby, players develop the objective of saving the planet in order to leave it. This goal drives players to gather resources, build vehicles and travel to the maximum depths of the ocean. This takes place on a crater which holds the biomes. At crater edge, players find the “ecological dead zone.” This boundary-area holds no resources, but only Ghost Leviathans (Figure 2). These creatures try to push players back to the crater or kill them. This area covers the rest of the game-world, yet after 8,192 meters, the game warps players back to the crater.



Figure 1. The biome in which players start on planet 4546B. The biome is filled with biodiverse and colourful flora and fauna.

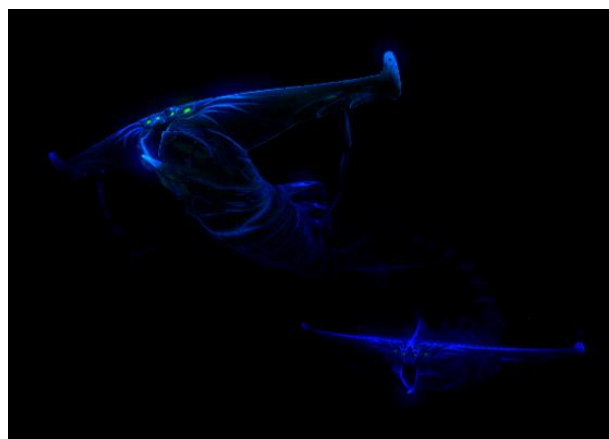


Figure 2. The ecological dead zone of *Subnautica*. The area contains a vast ocean where life is sparse.

⁹ Unknown Worlds Entertainment (2018), *Subnautica*.

Despite the arrival of the sequel, *Subnautica: Below Zero* in 2021, the original game continues to hold a strong position.¹⁰ This is evidenced by both the greater number of positive reviews compared to *Subnautica: Below Zero* on Steam and the thriving online fan-community which actively discusses the original game even today.¹¹

Subnautica's enduring popularity can be attributed to several factors. First, it stands out within the survival game genre, which includes titles like *Minecraft* (2011), and *No Man's Sky* (2016), and underwater-games like *ABZÛ* (2016), *In Other Waters* (2020) and *Under the Waves* (2023) through its unique use of different biomes and the dead zone to create terror. Despite the other popular games mentioned, *Subnautica* received the awards of "Best Survival Game" from *PC Gamer* in 2018, "PC Game of the Year" from *Golden Joysticks* in 2018 and "Best Exploration Game" from *Game Informer* in 2018.¹² Furthermore, *Subnautica* still gains positive reviews on Steam, as the platform states that over 96% of 240,000 players so far give it a high score.¹³ Players praise the worldbuilding, atmosphere while exploring, as well as the realistic underwater elements.¹⁴ Responses to these aspects of the game are also still widely discussed through online user-discourses like YouTube and Reddit. In these discourses, players also actively share their responses to the ecological dead zone.

The continuous popularity, large active fanbase and widely shared responses to the dead zone make *Subnautica* a compelling case study. The game offers a unique opportunity to explore the potential of video games to communicate environmental messages about the relationship between humans and nature. Therefore, it is socially relevant to examine player responses, experiences and interpretations of *Subnautica*'s dead zone, particularly in the context of real-world ecological dead zones.

¹⁰ Unknown Worlds Entertainment (2021), *Subnautica: Below Zero*, [Mac OS, Nintendo Switch, PlayStation 4, PlayStation 5, Windows, Xbox One, Xbox Series X/S], Unknown Worlds Entertainment.

¹¹ "Subnautica," Adventure Games, Steam, accessed April 10, 2024,

<https://store.steampowered.com/app/264710/Subnautica/>.

"Subnautica: Below Zero," Adventure Games, Steam, accessed April 10, 2024,

https://store.steampowered.com/app/848450/Subnautica_Below_Zero/.

¹² "Subnautica," Adventure Games, Steam, accessed April 10, 2024.

¹³ "Subnautica," Adventure Games, Steam.

¹⁴ "Subnautica," Reviews, Steam Community, Review by Faldang, accessed on April 2, 2024,

<https://steamcommunity.com/id/Faldang/recommended/264710/>.

"Subnautica," Reviews, Steam Community, Review by Helios604, accessed on April 2, 2024,

<https://steamcommunity.com/profiles/76561198142946495/recommended/264710/>.

Theoretical Framework

This study situates the analysis of the ecological dead zone through a multi-faceted theoretical framework. Ecocritical game theory firstly grounds the examination of *Subnautica*'s biomes and dead zone. This framework is then linked to the older and more expansive concepts of the natural sublime and benign masochism, as well as how the sublime relates to the era of the Anthropocene. Moreover, this research turns to Gerald Voorhees' perspective of games as tools for communication through their combined use of procedural, aural, visual and textual representation. Finally, the study connects discourse on ecological dead zones to *Subnautica*'s dead zone, the surrounding online discourse, the use of paratexts by players and the importance of framing for the environment.

Procedural Ecology and Environments in Videogames

When it comes to understanding the role of videogames in communicating environmental and ecological messages, Alenda Y. Chang takes on a critical perspective towards games and their realization of in-game environments.¹⁵ She argues that games often either overlook ecological concerns like energy flows, or simply use environments as visual backgrounds which are functionally inert.¹⁶ This means that they overlook aspects which realistically characterize alive environments, like a dynamic response to player's taking plants. Game-environments thus become "mere scenery" for a story to be set in.¹⁷ This critical perspective also applies to the biomes in *Subnautica*, since they remain a static backdrop. All the biomes, including the dead zone, are devoid of intricate life cycles which define existing ecosystems. Regardless, Chang does still regard games as opportunities to introduce manners to become more aware of environmental issues. For this purpose, ecological games ought to show shifting surroundings which players truly inhabit.¹⁸ This means that while playing a game and engaging with the game-world, players become part of the environment. They affect the world through their choices and active exploration. So, ultimately for Chang, more interactive and shifting game-environments which players inhabit, would result in the ability of players to move beyond the binary of virtual and real nature.¹⁹

¹⁵ Alenda Y. Chang, "Games as Environmental Texts," *Qui Parle* 19, no.2 (Spring/Summer 2011), 60, <https://www.jstor.org/stable/10.5250/quiparle.19.2.0057>.

¹⁵ Tony Manninen, "Interaction Forms and Communicative Actions in Multiplayer Games," *Game Studies* 3, no.1 (May 2003).

¹⁶ Chang, "Games as Environmental Texts," 59.

¹⁷ Chang, "Games as Environmental Texts," 60.

¹⁸ Chang, "Games as Environmental Texts," 78.

¹⁹ Chang, "Games as Environmental Texts," 77-78.

Abraham builds upon Chang's argument that developers "have yet to develop more sophisticated rules for interaction between players and game-environments."²⁰ Accordingly, how and whether players can undertake specific actions in game-environments matter. Chang and Abraham argue that this reproduces instrumental relations, such as the idea that nature exists to serve human needs. Notably, even though Chang's point originated in 2011, it remains relevant to Abraham's 2022 research on survival-crafting games.²¹ He states that these games rely on a repetitive narrative of players having the environment at their disposal to gather materials.²² He uses *Subnautica* as an example, since it provides players with endless resources which players can gather for machinery. The amount of resources which players need increases with every step in their "technological journey."²³ Consequently, the rate in which players gather and use resources also increases. Therefore, Abraham argues that games like *Subnautica* simulate the processes of modern capitalism through the utilization of technologies.²⁴ This contains the unsustainable cycle of resource-extraction and constructing better machinery.

So, according to Chang and Abraham, player-actions continue to reify economic ideologies instead of ecological ones, and thus fail to capture the complexities in the relationship between humans and the environment. Whilst this critical outlook is useful to reflect on the biomes of *Subnautica*, the ecological dead zone juxtaposes with Abraham's argument about this game. Studying this resource-devoid area is thus relevant to broaden Chang's and Abraham's research. It further explores player interactions with game-environments, which sheds a light on whether developers truly not yet facilitate complex and realistic interactions between in-game nature and players.

Bridget L. Georgetown agrees with Abraham and Chang on this specific notion.²⁵ Yet, she adopts a more positive perspective, arguing that games can foster ecological awareness, even without explicit environmental messages.²⁶ She states that exploration of player's connections with nature can arise from analysing games through an ecocritical lens. This "ecocriticism" focuses on how literature describes the natural world.²⁷ This illuminates, for example, how players can interact with the biomes and dead zone in *Subnautica*. Georgetown

²⁰ Chang, "Games as Environmental Texts," 60.

²¹ Abraham, *Digital Games After Climate Change*, 61-88.

²² Abraham, *Digital Games After Climate Change*, 69.

²³ Abraham, *Digital Games After Climate Change*, 73.

²⁴ Abraham, *Digital Games After Climate Change*, 72-73.

²⁵ Bridget L. Georgetown, "Pixelated Nature: Ecocriticism, Animals, Moral Consideration and Degrowth in Videogames," *Dossie Comunicação, Mídia, Videogames* 26, no.2 (2019): 14.

²⁶ Georgetown, "Pixelated Nature," 25.

²⁷ Georgetown, "Pixelated Nature," 15.

contends that most survival-games depict nature as hostile surroundings, which reinforces the conflict of man versus nature.²⁸ Ecocritical reflections on games thus result in a better grasp on how people understand nature. However, while online discourses surrounding games might facilitate the application of ecocritical lenses towards game-environments, it is important to acknowledge that *Subnautica*'s current online discourse, insufficiently delivers on this front. To foster stronger ecocritical discourses surrounding games, either dedicated educational forums or scholar-led guidance during environmental conversations, could be beneficial.

Nonetheless, Georgetown's emphasis on the potential of games, allows this research to focus on the opportunities for players to explore their connection with game-environments and to further discuss this in online user-discourses. By adopting the (eco)critical perspectives outlined by Chang, Georgetown and Abraham, this research offers a critical reflection on *Subnautica*'s construction of the underwater environment. It emphasizes how the procedural workings, predetermine player engagement with nature, and how Georgetown's approach, which incorporates player responses, fosters a broader understanding of environmental framing in games. This contributes to ecocritical discussions on environmental representations in games, as exemplified by Abraham's work.

Beyond the Environmental Sublime and Human-Nature Binary

Within the domain of ecocritical game studies, the concept of the natural sublime often arises. For instance, Georgetown applies the term to describe that most games play with this feeling of being overwhelmed by nature.²⁹ However, the concept of the sublime holds a long history of distinct meanings across different eras. Dating back to the 18th Century, Edmund Burke defined the concept as a primarily physical experience which arises from the passions of pain and danger without enduring those circumstances.³⁰ This complex sensation can be triggered by stimuli like cries of animals, colours, darkness and vastness.³¹ Another foundational contributor of the concept is Immanuel Kant, who similarly describes that the sublime arises from a feeling of fear for the power of nature.³² Yet, instead of focusing on the physical, Kant emphasizes the mental experience of confronting something that overwhelms the senses. Both these definitions are useful for the analysis, since the stimuli of the sublime are coherent with

²⁸ Georgetown, "Pixelated Nature," 20.

²⁹ Georgetown, "Pixelated Nature," 14.

³⁰ Edmund Burke, *A Philosophical Enquiry Into the Origin of Our Ideas of the Sublime and Beautiful* (Notre Dame: University of Notre Dame Press, 2017), 65-67.

³¹ Burke, *A Philosophical Enquiry Into the Origin of Our Ideas of the Sublime and Beautiful*, 85-95, 97-100, 118, 169.

³² Immanuel Kant, *Critique of Judgement*, ed. Nicholas Walker and James Creed Meredith (New York: Oxford University Press, 2007), 87-88.

the characteristics of *Subnautica*'s dead zone; many players notice similar terrorizing, and potentially thought-provoking aspects of the area.

Christopher Hitt notices that Burke's and Kant's conceptions of the sublime arise from a "disorienting or overwhelming confrontation with a natural object."³³ Their focus on confronting this 'other' reinforces the ideology that the natural world is separate from the human world, which stabilizes old patterns of thinking. This separation, rooted in a colonial mindset, views nature as something that can be dominated and exploited. This downplays human's impact on the environment and hinders a sense of responsibility towards it. Hitt hence acknowledges a gap in ecocriticism's engagement with the sublime.³⁴ Nonetheless, he sees potential in the sublime to foster better relationships with nature. He states that a new concept: the "ecological sublime," could appreciate nature while acknowledging human's connection to it.³⁵ This entails rediscovering respect for the wildness and power of nature. It thus presents a counterpoint to the approach of domination and exploitation.³⁶

In a similar manner, Marco Caracciolo is critical on the application of the concept of the sublime in "Being Moved by Nature in the Anthropocene."³⁷ He states that the experience of the sublime is no longer solely shaped by external forces of nature like Kant and Burke describe. The Anthropocene is the era defined by destructive effects of human actions on environments. In this era, the sublime is increasingly connected to humanity's impact on the environment. Caracciolo argues, similar to Hitt, that the sublime should not just define 'being moved by nature,' as if nature is separate from humans. On the contrary, it should embrace the experience of being involved in nature and playing a role in environmental issues.³⁸ In order to move beyond the human-nature-binary, Caracciolo argues for cultivating a broader range of emotions towards nature, emphasizing human involvement. This focus on entanglement distinguishes his perspective from Hitt's, who mainly advocates the appreciation and respect for nature. Caracciolo calls for expanding the emotional landscape traditionally associated with the sublime by Burke and Kant. This expansion would also encompass more complex feelings in everyday encounters with nature, ranging from seeing nature as "dear to us" and feelings of guilt or distress in response to issues caused by climate change.³⁹ Caracciolo's

³³ Christopher Hitt, "Toward an Ecological Sublime," *New Literary History* 30, no.3 Ecocriticism (Summer 1999): 605.

³⁴ Hitt, "Toward an Ecological Sublime," 605.

³⁵ Hitt, "Toward an Ecological Sublime," 609.

³⁶ Hitt, "Toward an Ecological Sublime," 620.

³⁷ Marco Caracciolo, "Being Moved by Nature in the Anthropocene: On the Limits of the Ecological Sublime," *Emotion Review* 13, no. 4 (October 2021): 299.

³⁸ Caracciolo, "Being Moved by Nature in the Anthropocene," 299-300.

³⁹ Caracciolo, "Being Moved by Nature in the Anthropocene," 303-304.

vision, alongside Hitt's, thus aid in explicating the complexities of being moved by nature in the Anthropocene. It offers a valuable lens for critically reflecting on player responses to *Subnautica*'s dead zone.

However, whilst the sublime relates to encountering nature, virtual environments like games arguably often tap into the phenomenon of benign masochism. This corresponds with the urge of seeking the sensation of fear through terrifying or unpleasant experiences within a relatively safe environment.⁴⁰ It thus appeals to sensation seekers; people who enjoy thrilling experiences, which can involve dangerous situations. In essence, benign masochism posits that positive emotions like excitement can arise from negative emotions like fear or terror.⁴¹ Examples of such experiences include bungee jumping or playing horror games. Even though *Subnautica* is not a horror game, players online often refer to the horrifying or terrifying experiences it evokes. Especially related to the dead zone, many players visit the area to gain thrilling experiences through exploration and looking for the inhabitants. *Subnautica* hence affords the contradictory sensation of "benign masochism" through the dead zone.

Since players have no purpose in this zone regarding plot-development or gaining resources, it is relevant to examine the players' reasons for entering, their emotional responses, and how they interpret their relationship to this zone as well as non-virtual nature outside of the game. According to Caracciolo, analysing nature should include tracing these emotions and connections through considering the moral responsibilities of human impact on ecosystems.⁴² This research will therefore critically assess how *Subnautica* uses framings for the creation of the ecological dead zone, as well as how players respond to it online.

Games as Discourse and Environmental Communication

Environmental communication faces challenges when addressing complex issues regarding climate change, like the increase in number of dead zones.⁴³ Ezra M. Markowitz and Meaghan L. Guckian emphasize these challenges and offer insights to overcome them, like confronting false information, using specific frames and effective storytelling.⁴⁴ Notably, the final aspect aligns with videogames, which are increasingly studied from the perspective of their potential

⁴⁰ Karolina Dyduch-Hazar and Vanessa Mitschke, "Affective Preferences in Benign Masochism," *Journal of Research in Personality* 107 (October 2023), <https://doi.org/10.1016/j.jrp.2023.104429>.

⁴¹ Dyduch-Hazar and Mitschke, "Affective Preferences in Benign Masochism," 1-2.

⁴² Caracciolo, "Being Moved by Nature in the Anthropocene," 304.

⁴³ Adrew H. Altieri and Keryn B. Gedan, "Climate Change and Dead Zones," *Global Change Biology* 21 (2015): 1395-1406.

⁴⁴ Ezra M. Markowitz and Meaghan L. Guckian, "Climate Change Communication: Challenges, Insights and Opportunities," *Psychology and Climate Change* (2018): 35-63, <https://doi.org/10.1016/B978-0-12-813130-5.00003-5>.

to communicate (environmental) messages. For instance, Gerald Voorhees considers games as thoroughly discursive and argues that they should be studied as such.⁴⁵ He states that textual, visual, aural and procedural representations allow games to communicate effectively.⁴⁶ These various fragmented representations in games collectively create arguments while playing.

Especially noteworthy is the role of procedural representation, which uniquely adheres to computational media like games.⁴⁷ Regarding these procedural aspects, many scholars, as well as Voorhees, refer to Ian Bogost to discuss ‘procedurality’ and ‘procedural rhetoric.’⁴⁸ Bogost describes procedurality as a perspective towards processes in order to understand, interpret, create or explain them. A process here concerns how systems, like games, function. Bogost cites Janet Murray to explain the ‘procedural’ as the ability of systems to execute a set of rules.⁴⁹ These are implemented by software-developers, who exercise control over game-processes. As Bogost argues, processes can be employed persuasively through a concept he terms the ‘procedural rhetoric.’⁵⁰ This approach suggests that games can transmit ideologies through the processes during gameplay. Voorhees therefore states that by employing the representations simultaneously, games can communicate and stage scenarios. Therefore, games are “discursive formations within which knowledge is confirmed and contested.”⁵¹ Through the theoretic lens defined by Voorhees and Bogost, this study examines *Subnautica*’s written, visual, aural and procedural representations, which collectively frame the dead zone. Hereby, this study investigates how *Subnautica* relates to the challenges and insights of climate communication mentioned by Markowitz and Guckian. Specifically, it addresses whether the game confronts or reinforces false information on the dead zone through its use of specific framings.

This construction will be studied in close relation to user-discourses. As Voorhees argues, what games stage, require a player’s response.⁵² Players of *Subnautica* respond not only through online discussions, but also by creating texts surrounding the game, often referred to as ‘paratexts.’ Jan Švelch provides a review of this concept and argues that within

⁴⁵ Gerald Voorhees, “Discursive Games and Gamic Discourses,” *Futures of Communication* 1, no.1 (August 2012), 2.

⁴⁶ Voorhees, “Discursive Games and Gamic Discourses,” 4-5.

⁴⁷ Voorhees, “Discursive Games and Gamic Discourses,” 4.

⁴⁸ Ian Bogost, *Persuasive Games: The Expressive Power of Videogames* (Cambridge: The MIT Press, 2007), 3-4.

⁴⁹ Janet H. Murray, *Hamlet on the Holodeck: The Future of Narrative in Cyberspace* (Massachusetts: MIT Press, 1998), 71.

⁵⁰ Bogost, *Persuasive Games*, 28-29.

⁵¹ Voorhees, “Discursive Games and Gamic Discourses,” 15.

⁵² Voorhees, “Discursive Games and Gamic Discourses,” 13.

game studies, most scholars refer to Mia Consalvo's definition.⁵³ According to Consalvo, paratexts "lend the central text meaning, framing and shaping how we understand it."⁵⁴ Yet, when it comes to games, Consalvo states that most scholars focus on the game as the central text, whilst a game can also function as an example for another central text, such as a YouTube video.⁵⁵ She therefore argues that games should not always be regarded as 'central texts,' but should be studied in relation to other texts. Regina Seiwald builds on this and connects Consalvo's idea to Steven E. Jones' point that for games, paratexts are "as important as the text itself."⁵⁶ This notion is especially relevant for games like *Subnautica*, which foster large and active communities. As Seiwald argues, games should be approached with an awareness of how surrounding paratexts affect perceptions of the game.⁵⁷ This emphasis on the power of paratexts to frame a game makes Seiwald's and Consalvo's perspectives useful to analyse framings in user-generated content, like fan-made maps and wiki-pages about *Subnautica*. By including player responses in online user-discourses in the shape of discussions and paratexts, this research acknowledges the "contingent nature" of games within the "realm of meaning-making," as advocated by Consalvo.⁵⁸

Ecological "Dead" Zones in Popular Discourse

Regarding this 'realm of meaning making' in discourses of ecological dead zones, Caracciolo argues that the Anthropocene shapes how people perceive climate change and their relation to nature. Philosopher Astrid Schrader supports this point of human's entanglement with nature.⁵⁹ Similarly, Jesse Peterson also discusses dead zones in the context of popular discourse. These critical perspectives on dead zones and climate change in the Anthropocene provide a lens for analysing the online player discourse surrounding *Subnautica*.

Schrader builds on Caracciolo's argument and emphasizes that the perception of climate change and dead zones is heavily influenced by how people see themselves in relation to nature.⁶⁰ In literature, this corresponds with a growing disconnection between humans and

⁵³ Jan Švelch, "Paratextuality in Game Studies: A Theoretical Review and Citation Analysis," *Game Studies* 20, no.2. (2020), accessed April 15, 2024, https://gamestudies.org/2002/articles/jan_svelch.

⁵⁴ Mia Consalvo, "When Paratexts Become Texts: De-centering the Game-as-text," *Critical Studies in Media Communication* 34, no.2 (2017): 177-183, <https://doi.org/10.1080/15295036.2017.1304648>.

⁵⁵ Consalvo, "When Paratexts Become Texts," 182.

⁵⁶ Regina Seiwald, "De-centralising the Text: The Text-paratext Relationship in Video Games," in *(Not) In the Game: History, Paratexts and Games*, ed. Regina Seiwald and Ed Vollans (Berlin: De Gruyter Oldenbourg, 2023): 15-31.

⁵⁷ Seiwald, "De-centralising the Text," 28-29.

⁵⁸ Consalvo, "When Paratexts Become Texts," 182.

⁵⁹ Astrid Schrader, "The Time of Slime: Anthropocentrism in Harmful Algal Research," *Environmental Philosophy* 9, no.1 (Spring 2012): 71-94.

⁶⁰ Schrader, "The Time of Slime," 75.

nature. For example, according to George Lakoff, the concept of the environment is ultimately connected to a misunderstanding of the relationship between humans and nature.⁶¹ He argues that the Environment Frame regards environment as different and separate from mankind. Yet, according to Lakoff, this frame is false, since paradigms of constantly pursuing economic and technologic progression result in economic and ecological meltdowns.⁶² Hereby, the actions from mankind directly influence natural surroundings. Schrader therefore states that the binary of human and nonhuman should be disrupted. She argues that this can be achieved through focusing on how people understand the nonhuman, particularly in the context of environmental issues like ecological dead zones.⁶³ She explicates through the definition of ecologist Jeremy Jackson that dead zones are ecosystems which move backwards regarding biodiversity and lose economic value to humans.⁶⁴ These areas are thus scarce on the animals “we want” and mainly contain toxic microbes, which are “animals we do not want.”⁶⁵ Even though the animals are different, *Subnautica*’s dead zone also contains animals “we do not want:” the Leviathans. Paired with the notion that both the fictional and existing dead zones have low economic value for humans, it is notable that the ‘ecological dead zone’ comes with preconfigured meanings, framings and understandings.

These framings and understandings connect to “Are Dead Zones Dead” from Jesse Peterson.⁶⁶ According to Peterson, popular discourse of environmental collapse in sea-based systems reflects the repetition of the narrative that dead zones refer to a complete ecological collapse. However, the uncontrolled growth of algae leads to a type of collapse that primarily benefits these organisms.⁶⁷ This phenomenon renders areas of the oceans unproductive and commercially unprofitable for humans. The framing of this collapse as an entire ecological collapse implies that a healthy sea is synonymous with a productive sea.⁶⁸ Hence, as Schrader similarly argues, in popular discourse, the understanding of dead zones is socially, culturally and economically constructed through the use of frames. It is consequently relevant to study how misconceptions of dead zones relate to popular discourse and how it is used as a framing device. This also applies to the misconception of *Subnautica*’s “crater edge” as a dead zone.

⁶¹ George Lakoff, “Why it Matters How We Frame the Environment,” *Environmental Communication* 4, no. 1 (March 2010): 70-81, <https://doi.org/10.1080/17524030903529749>.

⁶² Lakoff, “Why it Matters How We Frame the Environment,” 77.

⁶³ Schrader, “The Time of Slime,” 76.

⁶⁴ Jeremy Jackson, “Biodiversity Decline: Interview with B. C. Jackson,” *Annenberg Learner*, accessed on March 25, 2024, <https://www.learner.org/series/the-habitable-planet-a-systems-approach-to-environmental-science/>.

⁶⁵ Jackson, “Biodiversity Decline: Interview with B. C. Jackson.”

⁶⁶ Jesse Peterson, “Are Dead Zones Dead?” 32-47.

⁶⁷ Peterson, “Are Dead Zones Dead?” 37.

⁶⁸ Peterson, “Are Dead Zones Dead?” 39.

The similarities between the conceptions and framings of the dead zone signify how this repetition of misinformation hinder effective communication about environmental issues.

In popular discourse and in the case study of this research, dead zones are framed in a manner where ecologically “dead” environments are synonymous with unproductive ones. Both Peterson and Schrader therefore argue that we need to rethink the relationship between human and nature.⁶⁹ According to Peterson, exploring narratives of ecological collapse, like *Subnautica*’s dead zone, reveals dominant frames and thus sheds a light on the struggle of society to properly understand these ecosystems.⁷⁰ This study hence opts to explore framings of *Subnautica*, how players react to it in online discourse, as well as how they then (re-)frame the dead zone and whether they hereby refer to the ‘real-world’ application of ‘ecological dead zones.’ To investigate these aspects and gain insight into player perceptions, the method-section below further defines the methodology of a framing analysis and how it can be applied to the different types of content.

⁶⁹ Peterson, “Are Dead Zones Dead?” 34.

Schrader, “The Time of Slime,” 73.

⁷⁰ Peterson, “Are Dead Zones Dead?” 34-35.

Methodology

This research conducts a multimodal framing analysis to examine the framings surrounding the ecological dead zone in *Subnautica*. The analysis investigates both the visual and procedural aspects of the zone, alongside player responses from online discussions and user-generated content. In order to explore these different types of content, this study follows a similar structure as the previously mentioned text of “The Underrealized Ecocritical Potential of *ABZÛ*.”⁷¹ This study on *ABZÛ* incorporates both a content analysis, as well as a reception study to explore whether players pick up on the rhetorical aspects of the game. Even though the reception study contained a larger corpus through analysing over 2000 player-comments, the structure remains applicable to verify how a message is perceived by players. Therefore, the analysis of *Subnautica*’s dead zone similarly focuses on the following levels:

1. Game design of *Subnautica* and the initial framing of the ecological dead zone.
2. Descriptions from players of their experiences and understandings of the area.
3. User-generated content which further (re)frames the dead zone of *Subnautica*.

While first of all the game design of the dead zone is considered, the primary focus is on the player reception through identifying recurring themes within player responses. In this way, the game analysis of the dead zone serves as a foundation for understanding online player responses.

Framing the Environment in Videogames

Regarding the framing analysis, George Lakoff argues that frames shape the understandings of the environment. He defines frames as circuits in the brain which construct knowledge through semantic roles and connections to other frames.⁷² Lakoff exemplifies how this works through the Environment Frame, which posits nature as separate from humans.⁷³ This means that the environment and nonhuman creatures are regarded as Others which surround us. He critiques this frame and proposes to reframe environmental issues using strategic language and through providing experiences of natural environments.⁷⁴ Strategic language involves employing terms which activate desired frames such as “climate crisis,” instead of “climate change,” in order to emphasize urgency.⁷⁵ Therefore, this analysis builds on Lakoff’s ideas by

⁷¹ Trépanier-Jobin et al. “The Underrealized Ecocritical Potential of *ABZÛ*,” 311-332.

⁷² Lakoff, “Why it Matters How We Frame the Environment,” 70-81.

⁷³ Lakoff, “Why it Matters How We Frame the Environment,” 76-77.

⁷⁴ Lakoff, “Why it Matters How We Frame the Environment,” 76.

⁷⁵ Lakoff, “Why it Matters How We Frame the Environment,” 73-74.

examining how *Subnautica* frames the ecological dead zone and how it facilitates player-experiences with this fictional ecosystem.

As both Chang and Abraham argue, ecological games ideally offer alternatives to ideological patterns which correlate with global capitalism. Accordingly, most games either frame the environment as mere scenery in which the plot takes place, or as an inexhaustible source for materials which the players can take without facing repercussions. Regarding the mere scenery, Chang explains that a game environment hereby remains static.⁷⁶ In that case, nature is non-interactive and acts as a set piece. Moreover, according to Abraham, framing the environment as a mere source for materials is present in *Subnautica* as player success heavily relies on “extraction and use of natural sources.”⁷⁷ So, even though Lakoff originally focuses on text in relation to frames, the same perspective can be applied to *Subnautica*’s game design, online player-discussions, and user-generated content. This allows for a focus on both the framing of the ecological dead zone in *Subnautica* as well as the evolving interpretations and framings from players in different online user-discourses.

Frames in the Selected Corpus

By analysing both the original framings and the player descriptions of their understandings and experiences of these framings, this study aims to illuminate the significance of environmental framing. Given the extensive nature of the game as well as the player responses online, a targeted selection will be employed, guided by criteria further elaborated below. While this explorative approach excludes many comments and content, it is selected for its effectiveness in providing a focused overview of aspects directly related to dead zones.

Firstly, the textual dimension examines how *Subnautica* frames the ecological dead zone through the visual, aural, and procedural representation. This includes investigating how the game utilizes pre-existing environmental frames. Similar to Trépanier-Jobin et al.’s analysis of *ABZÛ* which highlighted the game’s procedures, images and sounds, this research explores *Subnautica*’s environments, soundscapes, creatures, and procedural elements such as the game-mechanics.⁷⁸ These textual aspects collectively contribute to *Subnautica*’s rhetorical framing of the dead zone. By contrasting this framing with the lively biomes, this analysis aims to explore how *Subnautica* shapes what players experience in the dead zone.

Furthermore, to understand player reception, the study analyses online player descriptions of their experiences and understandings of the dead zone. Reddit comments and

⁷⁶ Chang, “Games as Environmental Texts,” 58-59.

⁷⁷ Chang, “Games as Environmental Texts,” 58.

⁷⁸ Trépanier-Jobin et al, “The Underrealized Ecocritical Potential of *ABZÛ*,” 324.

threads are relevant due to the dedicated *Subnautica* community, where content about the dead zone can be targeted through searching “Ecological Dead Zone” in the subreddit. Threads and comments which explicitly discuss the dead zone, its impact on experiences, as well as connections to real-world ecology, will be incorporated. This examination aims to reveal which framings players observe, change or repeat regarding the dead zone. Secondly, this research includes the compilation video of: “Let’s Players Reaction To The Dead Zone.”⁷⁹ While the third chapter analyses how the let’s players frame the dead zone, this chapter explores how players respond to it through written comments on this medium.

Lastly, the final chapter pivots around user-generated content from *Subnautica*-fans in order to grasp which framings they (re)apply to create dead-zone-content. This firstly includes analysing the mentioned video to target how the four let’s players frame the area as entertaining content. Then, the analysis delves into the fan-made description of the dead zone on the Wiki.⁸⁰ This page serves as a repository of player-gathered information about the area and thus reflects their collective understanding of the zone. By examining this page, the study aims to identify potential (re)framing through alternative labels to the original “dead zone” framing and to gain insights into their collective understanding. Finally, the study turns to a selection of fan-made maps to explore how players visually frame the crater. This reveals how players interpret the planet of 4546B and whether they consider the dead zone as part of the game. Since most maps leave out the area, this study selected four maps which frame and show the dead zone differently. Also, studying how players consequently label the border as “void,” “dead zone,” “abyss,” or “crater edge” offers further insight into their understandings.

In conclusion, this multimodal framing analysis examines the initial presentation of the ecological dead zone in *Subnautica* and how players subsequently engage with, respond to, and (re)frame it through online discourses like the Wiki, Reddit and YouTube. By mainly analysing player-descriptions and user-generated content, this study aims to identify common themes and frames surrounding the dead zone. This research will explore how the game potentially perpetuates misconceptions about real-world dead zones. Ultimately, this study thus seeks to determine whether the game through its fictional environment, hinders or promotes effective communication about environmental issues.

⁷⁹ Ready Player React, “Let’s Players Reaction To The Dead Zone – Subnautica,” YouTube Video, 7:49, February 23, 2018, <https://www.youtube.com/watch?v=yx-VuKkySF4>.

⁸⁰ “Crater Edge,” Wiki, *Subnautica Fandom*, accessed on March 19, 2024, https://subnautica.fandom.com/wiki/Crater_Edge.

The Framing Analysis

In order to explore *Subnautica*'s ecological dead zone: the construction, framing and player responses, the analysis below is divided into three distinct chapters. The first chapter lays the groundwork for understanding player experiences through reflecting on the dead zone in relation to the other biomes. The second chapter examines these responses through Reddit and YouTube comments, focusing on recurring patterns. The final chapter then dives into user-generated content to study how players (re)frame the dead zone through these creations.

1. *Subnautica*'s Framing of the Ecological Dead Zone

Subnautica's biomes circulate around the sense of exploration and discovery. Players start in familiar shallows and progress to deeper locations. This chapter considers the first sub-question through delving into how the dead zone, a stark contrast to the biomes, utilizes silence, darkness, and a lack of resources to create the disorienting and unsettling area.

***Subnautica*'s Journey of Acclimatization**

Players commence the journey of *Subnautica* in the “Safe Shallows” (Figure 1). From here, they explore additional biomes; each exhibits different flora and fauna which vary in sizes and colours and live at different depths. The biomes are accordingly compatible with Chang's appliance of ‘mesocosms.’ She applies this ecological term of “experimental enclosures intermediate in size and complexity” to game-environments in order to focus on how games replicate aspects of nature.⁸¹ Hereby, the safe-shallows can be regarded as a mesocosm which holds a certain standard regarding biodiversity. It simulates properties of Earth through replicating corals and creatures. Since players start the game in the Shallows, they develop a familiarity for this mesocosm. However, through gathering resources in nearby biomes, players can fabricate equipment such as oxygen tanks and vehicles. Consequently, players can traverse deeper, and discover more diverse areas and resources, which results in further technological progression. This eventually allows them to explore all the biomes, including the deepest areas. This exploration of newly available mesocosms revolves around the process of acclimatization. Players develop a sensory awareness to distinguish signs of the various mini-ecosystems. Signs for instance relate to different animals, depths, and sounds. The unfamiliarity of an area then changes into familiarity. Specifically, players learn to perceive potential threats through recognizing the sounds of sea-creatures, which allows them to navigate biomes with a sense of safety. Through this acclimatization-process, players

⁸¹ Chang, *Playing Nature: Ecology in Video Games*, 17-20.

increasingly understand different biomes, which allows them to exploit them more effectively. So, as Chang argues, the enclosed “mini-ecosystems” in games blend real worlds with fictional rules.⁸² *Subnautica* hereby works with the rule that knowledge on the various mesocosms results in economic benefits and progression in the game.

Disorientation and Loneliness in the Dead Zone

Yet, regardless of the player’s ability to acclimatize to biomes, the ecological dead zone presents a distinct contrast (Figure 2). First of all, the region is characterized by silence. This shift disrupts the patterns of familiarity and leaves players without auditory cues for spatial awareness. Moreover, upon entering, players move beyond the crater and reach a steep stone cliff after which the ocean becomes darker. Since the zone lacks a seabed, moving away from the edge results in players being in a seemingly empty ocean without visual indicators of their whereabouts. Furthermore, as players go deeper, the sunlight diminishes, and the environment progressively darkens. This makes it increasingly difficult to orient which is up or down. Also, the area lacks visual marine life, which results in unfamiliarity and a sense of isolation; the player appears to be alone. Thus, the presence of the cliff, darkness and silence, and the absence of visual marine life, confront players with their solitary presence in the unfamiliar and disorienting dead zone.

However, lingering in this zone for over 30 seconds brings back a familiar occurrence; Ghost Leviathans will hunt the player. Encounters with small Leviathans (Juveniles) occur in biomes like the Grand Reef and Lost River (Appendix B). Yet, the dead zone deviates in the severity of the threat. Here, three mature Leviathans always spawn near players to force them back to the crater and thus preventing further exploration. So, even though being hunted by creatures occurs throughout *Subnautica*, the dead zone always poses a greater threat.

Defamiliarizing Environmental Exploitation

Beyond this threat, the dead zone also actively discourages exploration through the lack of gatherable items like Copper Ore. Unlike other biomes, which constantly accumulate new materials, plants and fish, the dead zone offers nothing. This disrupts the pattern of familiar mechanics and the gameplay loop of *Subnautica* of constantly seeking technological progression through resource accumulation. Due to the respawning of resources and players discovering new areas “to plunder,” Abraham states that *Subnautica* simulates the unsustainable aspect of constant technological advancement.⁸³ However, whilst the other

⁸² Chang, *Playing Nature: Ecology in Video Games*, 20.

⁸³ Abraham, *Digital Games After Climate Change*, 70-72.

biomes indeed perpetuate this ‘survival-crafting trope,’ the dead zone turns it around through the absence of materials and presence of Leviathans. In the dead zone, familiar mechanics of gathering resources cannot be performed. According to Alex Mitchell, this undermining of player-expectations can create “defamiliarization.”⁸⁴ This notion can be understood as making the familiar unfamiliar. Mitchell argues that this alienation leads to a heightened sense of awareness and the encouragement to slowly take in new circumstances.⁸⁵ Thus, the limitation in this established gameplay results in defamiliarization which forces players to consider their role and power in the environment. According to Gerald Voorhees, the focus on how a game environment works, is the procedural representation of a game.⁸⁶ So, regarding *Subnautica*, the shift towards the player’s inability to harvest resources and thrive in technological progression, procedurally represents the dead zone. This representation thereby creates an argument. The procedural aspects of the dead zone carry out a rhetoric of the player’s power in relation to nature: in the dead zone, the player is vulnerable and directionless.

Narrativizing the Invisible Wall

Both the hostility and emptiness of crater’s edge make it function as the border of the open-world. If players nonetheless manage to outrun the Leviathans, they can swim till 8192 meters from the centre of the map.⁸⁷ At that point, players reach an invisible boundary and get spawned back to the centre of the crater. Bryan Wuest refers to these game-boundaries as “invisible walls” and argues that they call “attention to the limitations on player movement.”⁸⁸ Yet some games, like *Ico* (2001) use the walls to reinforce the narrative and the player experience of being locked up in the environment.⁸⁹ Similarly, *Subnautica*’s dead zone reinforces the notion that the crater only contains a small portion of 4546B, yet the player’s purpose is on the crater. *Subnautica* hence provides players with some narrative lore, in order to connect the game logic to the open world-structure. When players first enter the area, they receive the following information on their PDA: “Warning: Entering Ecological Dead Zone. Adding report to databank.”⁹⁰ The databank states:

⁸⁴ Alex Mitchell, “Making the Familiar Unfamiliar: Techniques for Creating Poetic Gameplay,” DiGRA/FDG ’16- Proceedings of the First International Joint Conference of DiGRA and FDG 1, no.13 (2016), 4.

⁸⁵ Mitchell, “Making the Familiar Unfamiliar,” 14-15.

⁸⁶ Voorhees, “Discursive Games and Gamic Discourses,” 4.

⁸⁷ “Crater Edge,” Wiki, Subnautica Fandom, accessed on March 19, 2024, https://subnautica.fandom.com/wiki/Crater_Edge.

⁸⁸ Wuest, “Invisible Walls.”

⁸⁹ Japan Studio (2001), *Ico*, [PlayStation 2], Sony Computer Entertainment.

⁹⁰ Unknown Worlds Entertainment (2018), *Subnautica*.



Figure 3. The PDA provides players with information on the ecological dead zone in *Subnautica*.

This information textually represents the dead zone as less lively and biodiverse than the crater. Notably, *Subnautica* refrains from descriptions of genuine ecological dead zones and mentioning real-world phenomena like climate change. This approach to the invisible wall establishes environmental logics within the game-world which deviates from dead zones on Earth. As Voorhees stated, the “visual, aural, textual and procedural representations enable games to communicate.”⁹¹ Accordingly, *Subnautica* cohesively communicates that the dead zone is deadly and thrilling due to the Leviathans, depths and lack of light and sounds, and is useless regarding the lack of materials, plants and fish. However, Voorhees also argues that games through the mentioned representational modalities create situations which invite or even require player’s responses and interpretations.⁹² Therefore, as similarly structured in Trépanier et al.’s research, this study will trace how players pick up on *Subnautica*’s rhetorical aspects and framings through the analysis of user-discourses surrounding the dead zone.

2. Player Responses to *Subnautica*’s Ecological Dead Zone

This second analytical chapter analyses Reddit-posts and YouTube-comments to explore how players discuss the ecological dead zone. By analysing framing patterns in these responses, the chapter addresses the second sub-question of how players individually and para-socially grapple with their experience of this specific environment.

Experiencing the Ecological Dead Zone and the Environmental Sublime

The main recurring pattern in player-responses to the dead zone is the sense of terror and fear. Many Reddit threads and comments in the subreddit of “Subnautica” refer to these feelings. For example, “I hate the ecological dead zone” contains a short video of a player entering the

⁹¹ Voorhees, “Discursive Games and Gamic Discourses,” 4.

⁹² Voorhees, “Discursive Games and Gamic Discourses,” 13.

area and quickly thereafter encountering a Leviathan.⁹³ The player's immediate cognitive response is to pause the game. Moreover, one of the popular comments below contains: "For some reason I actually fear the edz. Encountering it just makes my skin crawl." The top comment on the YouTube video expresses a similar feeling through: "Minecraft: barrier. Subnautica: let's try trauma instead!"⁹⁴ Hereby, emotions like fear, trauma, terror and hate arise in players when entering the dead zone. According to Edmund Burke, the ocean is considered an object of terror and therefore raises the feeling of the sublime.⁹⁵ However, the sublime does not arise from the infliction of pain and danger, for this would result in mere terror. According to Burke, it is the distance between the terrifying and the person, which results in the sublime.⁹⁶ So, entering the dead zone and experiencing terror without being in genuine danger allows for this emotion to occur.

Furthermore, someone agrees with the Reddit comment mentioned above through: "I can only guess it has something to do with the lack of any visual indicators out there."⁹⁷ Other players similarly reply that the infinite emptiness made them nervous. These expressions are also shared in the YouTube comment-section, where people describe personal experiences: "the void/dead zone is the scariest place; the nothingness and endless depths."⁹⁸ Hereby, players signify that the disorientation from the lack of visual terrain is the biggest cause of these sensations. Burke explained that this sense of greatness, infinity, or vastness in height or depth are powerful causes of the sublime.⁹⁹ Hence, framings of the dead zone as a terrifying, infinite, vast and empty ocean affords experiencing the sublime. As mentioned in the first comment, players cognitively deal with this sensation through retreating or pausing the game. However, two different patterns of dealing with the sublime can be found in online user-discourses: benign masochism and humour.

Benign Masochism; Between Fear and Enjoyment

Even though most of the comments repeat similar experiences of terror, players are also aware of the thin line between terror and pleasure. For instance, people in the comment-section of the YouTube video refer to the oddity of the let's players exploring and seeking out the dead zone. Someone responds with: "Jack: sees ocean with just black in it, which claims that it is

⁹³ "I Hate the Ecological Dead Zone," Subnautica, Reddit, accessed March 21, 2024, https://www.reddit.com/r/subnautica/comments/15safp2/i_hate_the_ecological_dead_zone/.

⁹⁴ Ready Player React, "Let's Players Reaction To The Dead Zone."

⁹⁵ Burke, *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful*, 74-75.

⁹⁶ Burke, *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful*, 45-47.

⁹⁷ "I Hate the Ecological Dead Zone," accessed March 21, 2024.

⁹⁸ Ready Player React, "Let's Players Reaction To The Dead Zone."

⁹⁹ Burke, *A Philosophical Inquiry into the Origin of Our Ideas of the Sublime and Beautiful*, 97-100.

the dead zone and then jumps right into it.”¹⁰⁰ Thus, this person recognises how the game facilitates a version of benign masochism. As referred to before, it corresponds with finding pleasure in physical or emotional unpleasant experiences.¹⁰¹ So, even though people express sensations of terror or trauma, the many threads and discussions signify players’ interest in the area and wish to discuss their experiences online. For example, in “Is it just me?” (Figure 4) a player talks about how their exploration got disrupted.¹⁰² Someone replies with “I thought the ecological dead zone meant no plants or animals. I was sure wrong after a surprise attack Leviathan destroyed my seamoth.”¹⁰³



Figure 4. Two images collectively portray encountering the dead zone, which disrupts exploring the biomes in the game.

Both on Reddit and YouTube, players describe how the dead zone destroyed their vehicles or killed them. These explicit comments emphasize and celebrate the uncompromising design of the area. This corresponds with what Mathias Clasen and Jens Kjeldgaard-Christiansen state: “Horror media tend to imaginatively transport consumers into fictional universes that bring with danger, for example, in the form of simulated monsters or fictional villains. Through such imaginative absorption, people get to experience strong, predominantly negative emotions within a safe context.”¹⁰⁴ Thus, the dead zone can be regarded as an imaginative simulation which affords players to face the threat of Leviathans and experience the consequences in the safe game space. Online user-discourses hereby become the place where players connect about these thrilling experiences. This social context can be interpreted as a way to harness benign masochism. By sharing their encounters with terror, players engage in a type of phatic communication; a form of social interaction focused on building connection.

¹⁰⁰ Ready Player React, “Let’s Players Reaction To The Dead Zone.”

¹⁰¹ Dyduch-Hazar and Mitschke, “Affective Preferences in Benign Masochism,” 1-2.

¹⁰² “Is It Just Me?” Subnautica, Reddit, accessed March 21, 2024, https://www.reddit.com/r/subnautica/comments/11xo27e/is_it_just_me/.

¹⁰³ “Is It Just Me?”, accessed March 21, 2024.

¹⁰⁴ Mathias Clasen and Jens Kjeldgaard-Christiansen, “Horror, Personality and Threat Simulation: A Survey on the Psychology of Scary Media,” *Evolutionary Behavioural Sciences* 14, no.3 (2020): 213-220, <http://dx.doi.org/10.1037/ebs0000152>.

Thus, a sense of communal bonding arises from the shared narrative of in-game terror. Therefore, *Subnautica*'s dead zone exemplifies how online discussions can transform frightening in-game experiences into opportunities for positive social connections.

Humour as a Coping Mechanism and Communication Tool

Furthermore, the preceding Reddit-thread also applies humour to convey their experience (Figure 4). Humour is a recurring asset in threads and comments to describe personal experiences of the dead zone. Humour is mainly present in the form of memes. A meme can be defined as user-generated content which is shared on the internet and utilizes humour.¹⁰⁵ For example, a Reddit-user applies a SpongeBob-meme to emphasize the darkness in the area (Figure 5). Players in the comments reply with: "When the music cuts out...O_O" and "It terrifies me so much that I fear going into any zone that touches it."¹⁰⁶ Similarly, a Reddit-user created "When the PDA says ecological dead zone" and added a meme of "Something's wrong, I can feel it" (Figure 6).¹⁰⁷ Thus, comment-sections below these memes become places for players to discuss their cognitive and emotional responses to the area.



Figure 5. A SpongeBob meme is used to describe the dead zone's darkness.



Figure 6. An Eminem meme expresses the unsettling sensation of being in the dead zone.

Moreover, a player connected the meme of a car quickly backing up to the quote of the game signifying entering the dead zone in: "Ecological WHAT zone?"¹⁰⁸ The meme visualizes the cognitive response of hearing the PDA entry, waiting, processing, and then quickly backing up (Figure 7). Lastly, another player conveyed their fear of Leviathans through a meme about

¹⁰⁵ Andrew S. Ross and Damian J. Rivers, "Internet Memes, Media Frames and the Conflicting Logics of Climate Change Discourse," *Environmental Communication* 13, no.7 (2019): 975-994.

¹⁰⁶ "Me While in the Ecological Dead Zone," *Subnautica*, Reddit, accessed March 23, 2024, https://www.reddit.com/r/subnautica/comments/d1ysvx/spoilers_me_while_in_the_ecological_dead_zone/.

¹⁰⁷ "When the PDA Says Ecological Dead Zone [no spoilers]," *Subnautica*, Reddit, accessed March 23, 2024, https://www.reddit.com/r/subnautica/comments/dwh09s/when_the_pda_says_ecological_dead_zone_no_spoilers/.

¹⁰⁸ "[No Spoilers] Ecological WHAT Zone?" *Subnautica*, Reddit, accessed March 23, 2024, https://www.reddit.com/r/subnautica/comments/s14u7h/no_spoilers_ecological_what_zone/.

fears as well (Figure 8).¹⁰⁹ Thus, humour contains a mechanism to cope with players' terrifying or scary experiences with the dead zone. However, as Ross and Rivers state, the creators of memes also frame an issue or event to an audience.¹¹⁰ Through memes about the dead zone, players jokingly focus on their fears in the area. Even though memes could apply environmental or climate frames to the dead zone to communicate environmental messages, the meme-creators remain focused on the sensation of terror.



Figure 7. A clip of a video backing up and turning around portrays a player's cognitive response to the dead zone.



Figure 8. A player jokes that after entering the dead zone, they developed a new fear: encountering Leviathans in the dead zone.

However, Reddit threads also reveal a pattern of humorous criticism. For example, the thread “My safe shallows literally became the biological dead zone for no reason” has comments which respond to the cause of dead zones.¹¹¹ The thread concerns how this lively area became empty of flora and fauna. Commentors state: “Nice, you got the global warming expansion pack!” and “Warning creating biological dead zone. Are you sure the resources are worth it?” as well as “Yeah, that is what happens with a place where humans arrive,” and “That is usually the way a human infestation works out.”¹¹² These players utilize sarcasm and dark humour to take on an ecocritical perspective towards human actions in relation to ecological dead zones and climate change. This use of humour aligns with John Parham’s statement that: “environmentalism needs a principle of elasticity.”¹¹³ Elasticity here refers to using lighter and less rigid approaches for environmental communication, such as applying comedy.¹¹⁴ Accordingly, humour effectively involves people into environmental subjects. Therefore, by

¹⁰⁹ “I’ll Never Forget My Visit to the Crater Edge,” Subnautica, Reddit, accessed March 24, 2024, https://www.reddit.com/r/subnautica/comments/11xhnfm/ill_never_forget_my_visit_to_the_crater_edge/.

¹¹⁰ Ross and Rivers, “Internet Memes, Media Frames and the Conflicting Logics of Climate Change Discourse,” 978.

¹¹¹ “My Safe Shallows Literally Became the Biological Dead Zone For No Reason,” Subnautica, Reddit, accessed March 26, 2024, https://www.reddit.com/r/subnautica/comments/18egw0g/my_safe_shallows_literaly_became_the_biological/.

¹¹² “My Safe Shallows Literally Became the Biological Dead Zone For No Reason,” Subnautica, Reddit.

¹¹³ Parham, *Green Media and Popular Culture*, 122.

¹¹⁴ Parham, *Green Media and Popular Culture*, 135.

‘laughing at the environment’ through the humorous comments and memes, players connect, like and respond to environmental content. So, humour effectively targets wider audiences and includes them into discussions about environmental subjects like dead zones.

Negotiating the Labelling of the “Ecological Dead Zone”

Another returning phenomenon in online user-discourses is the labelling of the dead zone. For example, the thread “Do you guys like to call it the void, dead zone, or craters edge?” focuses on this practice through explicitly questioning the label.¹¹⁵ The most upvoted response simply asks: “ecological deadzone?” whilst the second considers various labels (Figure 9).

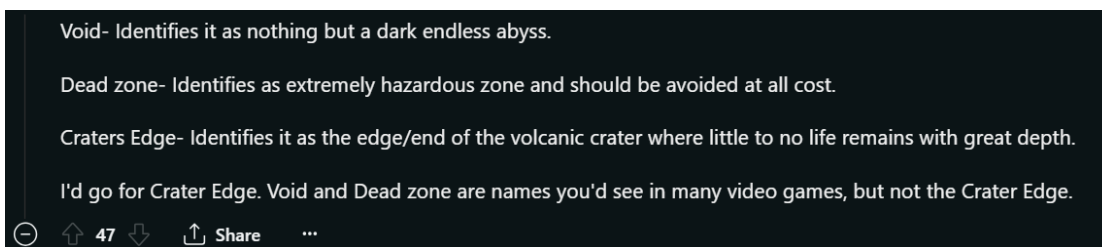


Figure 9. A player contemplates about the label of *Subnautica*’s dead zone.

Other comments discuss calling it the abyss or void because of the simplicity, or call it “NOPE,” “180 zone,” “I don’t call it, I run from it,” or “Oh shit I went too far.”¹¹⁶ Thus, due to the threat of the Leviathans in the border-zone, players do not mind what it represents or how it is defined, but merely try to stay away from it. Discussions on what ecological dead zones entail in relation to Earth thus remain absent.

Continuing with this labelling and re-conceptualizing of *Subnautica*’s dead zone, in the YouTube comment-section, many people refer to a quote from the philosopher Friedrich Nietzsche: “If subnautica was an RPG game: you stare into the abyss, the abyss stares back,” and “You stare into the abyss, the abyss stares back” as well as “I think this ‘biome’ is the exact definition of ‘you stared into the bottomless void... and the void stares back.’”¹¹⁷ Regarding the original quote, the abyss can mean something vast and mysterious, potentially dangerous. Yet, it is the gazing into the abyss and the gazing back which allows players to “discover the limits of the gaze itself.”¹¹⁸ Gazing contains the fixation on the abyss which can challenge or corrupt the observer. Hence, the recurring quote highlights a psychological

¹¹⁵ “Do You Guys Like to Call it the Void, Dead Zone or Craters Edge?” *Subnautica*, Reddit, accessed March 26, 2024, https://www.reddit.com/r/subnautica/comments/169tpz2/do_you_guys_like_to_call_it_the_void_dead_zone_or/.

¹¹⁶ “Do You Guys Like to Call it the Void, Dead Zone or Craters Edge?” *Subnautica*, Reddit.

¹¹⁷ Ready Player React, “Let’s Players Reaction To The Dead Zone.”

¹¹⁸ Gary Shapiro, “Nietzsche’s Story of the Eye: Hyphenating the Auen-Blick,” *Journal of Nietzsche Studies*, no. 22 (Fall 2001): 33.

impact of the dead zone on players. Paired with the conceptualization as the abyss or void, it frames the dead zone as the unknown which is characterized by incomprehensible depths which stare back. This labelling thereby focuses on the psychological aspects yet stays away from existing dead zones on Earth and the role of mankind in this growing phenomenon.

Repeating Misunderstandings

Beyond the re-labelling, players also repeatedly use *Subnautica*'s gameplay and game logic to explain and grasp what ecological dead zones entail in reality. For instance, a Reddit-thread states: "Now I know why it's an ecological dead zone" with a video of a player exploring the dead zone, until they are hunted by a Leviathan.¹¹⁹ The player accordingly comprehends the area as "dead," since a deadly creature inhabits it which killed the other organisms. Another comment however focuses on the geography of the game (Figure 10).

Actually, it's probably the other way around. It's an ecological dead zone for geographical regions rather than because of the Ghost Leviathan.

Deep oceans tend to be lifeless deserts. The aggressive ghost leviathans don't help, but most life in the oceans live very close to the surface wherever the ground is close enough for sunlight to reach.

Figure 10. A player focuses on the game logic of *Subnautica* to explain the dead zone to other players.

This player understands the dead zone as a lifeless area due to its depths. They misunderstand the dead zones as they exist on Earth and focus on the game logics through the geographical explanations of the crater. Thus, how *Subnautica* has reconstrued the term is followed by players through this conceptualization. Also, this framing reinforces a misconception of dead zones as naturally occurring lifeless regions, like "lifeless deserts."¹²⁰ So, by adopting the game logic, players might fail to recognize the ecological damage represented by dead zones.

Similarly, a recurring theme on Reddit involves users connecting real-world ocean photographs featuring deep cliffs to *Subnautica*'s dead zone. They link these environments to photos of diving subreddits or thalassophobia subreddits. The visual similarities of the cliff and blue abyss lead them to labelling these areas as "ecological dead zones." The search for "ecological dead zone" in the *Subnautica* subreddit yielded seven of these threads with high upvote counts.¹²¹ Notably, five of these directly reference the in-game warning message of: "(Warning), entering ecological dead zone," (Figures 11 and 12).

¹¹⁹ "[SPOILERS] Now I Know Why it's an Ecological Dead Zone," *Subnautica*, Reddit, accessed March 20, 2024, https://www.reddit.com/r/subnautica/comments/ftywri/spoilers_now_i_know_why_its_an_ecological_dead/.

¹²⁰ "[SPOILERS] Now I Know Why it's an Ecological Dead Zone," accessed March 20, 2024.

¹²¹ "[No Spoilers] Entering Ecological Dead Zone," *Subnautica*, Reddit, accessed March 13, 2024,



Figure 11. A picture of the Baraccuda Lake from the thalassophobia subreddit is reposted in the Subnautica subreddit.

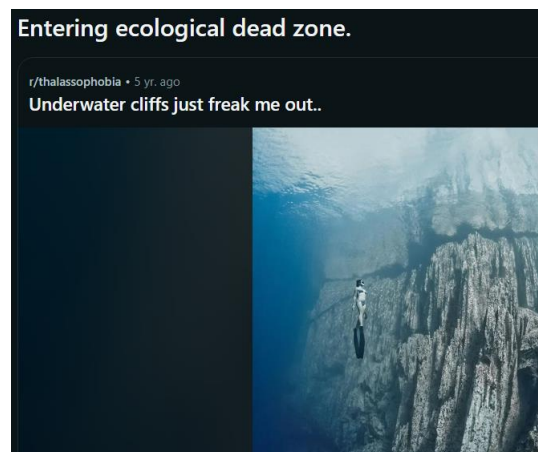


Figure 12. A photo from an underwater cliff is connected to the ecological dead zone through the PDA quote of the game.

Regarding the game logics, players recognized the characteristics of *Subnautica* and made the connection between the abyssal cliffs in the ocean and the border of the game. These threads thus reactivate the framings of *Sunautica*, since it frames these appearing oceanic abysses as dead zones. Accordingly, the characteristics of an underwater cliff and visually lacking flora and fauna become the characteristic of ecological dead zones. It thus reiterates misunderstandings of what these ecosystems entail on Earth and how they come to be.

Following and repeating the game logic in Reddit-content connects to what Lakoff refers to as the repetition of and (re)activation of frames. Even though words themselves are not frames, Lakoff argues that they can be chosen to activate specific frames.¹²² Lakoff states that the more language is repeated, the stronger the synapses in neural circuits in the brain become and the more this becomes “normal language.”¹²³ Accordingly, the repetition of the dead zones as an abyss, void, or desert matters. Thus, recurring game logics about *Subnautica* in user-discourses (re)activate frames and allow dead zones to be understood accordingly.

https://www.reddit.com/r/subnautica/comments/ftjc6r/no_spoilersentering_ecological_dead_zone/.
 “Warning Entering Ecological Dead Zone [no spoilers],” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/bu01nq/warning_entering_ecological_dead_zone_no_spoilers/.
 “[No Spoilers] Warning: Entering Ecological Deadzone,” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/fa5zis/no_spoilers_warning_entering_ecological_deadzone/.
 “[SPOILER] Now Entering the Ecological Dead Zone,” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/gcu6va/spoiler_now_entering_the_ecological_dead_zone/.
 “Entering Ecological Dead Zone,” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/9x7so7/entering_ecological_dead_zone/.
 “Serious Dead Zone Vibes. [No Spoilers],” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/riexd4/serious_dead_zone_vibes_no_spoilers/.
 “(No Spoilers) I Found the Ecological Dead Zone irl,” Subnautica, Reddit, accessed March 13, 2024,
https://www.reddit.com/r/subnautica/comments/w2x3az/no_spoilers_i_found_the_ecological_dead_zone_irl/.

¹²² Lakoff, “Why it Matters How We Frame the Environment,” 73-74.

¹²³ Lakoff, “Why it Matters How We Frame the Environment ,” 72.

Beyond the PDA: Virtual versus Existing Dead Zones

This specific framing-phenomenon also occurs in the real-life application of the term in user-discourses. For example, in “I was today years old, when I found out that we have the actual ‘ecological dead zone’ in my country” someone explains the hydrography of Romania and states that due to the lack of oxygen and toxic gas, the area is absent of marine life.¹²⁴ Below the thread, players excitedly respond with “holy shit,” “what is really cool about this is (...)” and “this is amazing, I am Romanian and a huge Subnautica fan.” Another commentor also mentions that “if we are drawing Subnautica comparisons, it quite literally has a lost river (...) which is super awesome.” The Lost River is a biome which features underwater rivers, which also exist on Earth (Appendix B). These comments hence highlight a prioritization of Subnautica-references over environmental causes behind real-world dead zones.

Similar trends appear on Reddit. In “Entering ecological dead zone” a player connected the black sea in a Minecraft-map to the recurring PDA entry of *Subnautica*. Below the thread, a Reddit-user commented: “fun fact, were starting to get ecological dead zones on Earth, where carbon has amassed so much that there is no oxygen circulating those areas so it’s becoming devoid of life.”¹²⁵ Notably, players lean towards wonder, amazement and excitement instead of being worried, sad, or disappointed. This lines up with Caracciolo’s point that more complicated emotions than the sublime should arise while discussing nature in the Anthropocene.¹²⁶ This encompasses feelings of distress, guilt or responsibility. Yet even though players connect *Subnautica*’s dead zone to dead zones on Earth through the Reddit threads, their focus remains on excitement about finding real-life counterparts, instead of expressing emotions like Caracciolo mentions. Thus, online player-conversations do not turn to subjects like pollution or the climate crisis.

In summary, players express that *Subnautica*’s dead zone evokes feelings of fear and terror. Players mainly grapple with these emotions, which relate to the sublime, through the use of humour, or through enjoying the fearful experiences, which corresponds with benign masochism. Online discussions moreover focus on re-labelling the dead zone with terms like the “void,” or “abyss,” rather than the scientific definition. This highlights how *Subnautica*’s

¹²⁴ “I Was Today Years Old, when I Found Out that We have the Actual ‘Ecological Dead Zone’ in My Country. Original in the Whole World,” Subnautica, Reddit, accessed March 18, 2024, https://www.reddit.com/r/subnautica/comments/17xno7o/i_was_today_years_old_when_i_found_out_that_we/.

¹²⁵ “[No Spoiler] ‘Entering Ecological Dead Zone,’” Subnautica, Reddit, accessed March 18, 2024, https://www.reddit.com/r/subnautica/comments/vuse4a/no_spoiler_entering_ecological_dead_zone/.

¹²⁶ Caracciolo, “Being Moved by Nature in the Anthropocene,” 303-304.

framing is reflected in player-understandings of real-world ecological dead zones and potentially leads to a focus on excitement over environmental problems.

3. (Re-)Framing of the Dead Zone by Players

This third chapter focuses on the paratexts of a let's play video compilation, a Wiki-page and user-generated maps. This content will be studied in this order, since the Wiki often informs the maps. While the previously studied memes and fan-discussions also qualify as paratexts, the selected materials for this chapter are curated or (co-)created by players who possess a certain level of game-knowledge they aim to share. Consequently, these creators actively frame the game-experience for players who are interested in learning more about *Subnautica*. This chapter hence prioritizes these paratexts to explore the third sub-question of how players actively construct meaning about the dead zone.

The Dead Zone: a Stage for Let's Players to Perform

The selected YouTube video contains a collection from four popular let's play videos.¹²⁷ Consalvo argues that let's play videos shape how people understand the central text; the game.¹²⁸ Specifically related to streamers, the purpose of their video is viewer-attention. Thus, which games they select and what aspects they emphasize are important to gain an audience. Hereby, the ecological dead zone of *Subnautica* contains content which let's players can easily react to with expressive and entertaining emotions.

Regarding these emotions, the four players respond similarly to the area and frame the dead zone as an exhilarating and terrifying environment in the game. They express that it is “wildly uncomfortable,” “terrifying,” and the “most horrible sensation” they experienced.¹²⁹ Whilst these emotions are accompanied by screams, the players also express positive emotions through their laughter and smiles. IGP for example screams ‘woohoo’ as he narrowly escapes an in-game death. This exhilarating response to the dead zone and their interest to explore it, is further illustrated through their cognitive responses. Jacksepticeye for example does not want to exit the area but seeks to show it to the viewers. Similarly, IGP and 8BitRyan re-enter the dead zone to allow the audience to focus on the silence: “Listen.”¹³⁰ They urge viewers to experience the dead zone through their content. Moreover, all four let's

¹²⁷ Ready Player React, “Let's Players Reaction To The Dead Zone.”

¹²⁸ Consalvo, “When Paratexts Become Texts: De-centering the Game-as-text,” 180-181.

¹²⁹ Ready Player React, “Let's Players Reaction To The Dead Zone.”

¹³⁰ Ready Player React, “Let's Players Reaction To The Dead Zone.”

players either are familiar with the dead zone and share their knowledge with the viewers or read the PDA entry to provide them with information.

The let's players thus shift the focus towards the informational and entertaining aspects of crater's edge. They seek to show the dead zone and what it entails but make their reactions the primary focus of this content. This is further exemplified by the video's format, which circulates around the YouTubers' responses to the dead zone. The emphasis is not on the qualities of the dead zone, but rather on the performative aspects of the let's players. Hence, as Consalvo states, the selected "games sit alongside the persona they craft."¹³¹ *Subnautica* and the dead zone thus afford content creators different ways of performing their identity to audiences. The let's players emphasize their sensationalized responses of fear, awe and excitement to elicit viewer engagement through likes, comments, and shares to opt for increased viewership. Hence, this framing constructs the ecological dead zone as a content-creation opportunity within *Subnautica*.

Collaboratively Documenting the Dead Zone: The Subnautica-Wiki

Furthermore, the fandom-made Subnautica-Wiki also (re)frames *Subnautica*'s dead zone. This online source is created and updated in order to offer insights on the area to players. Wikis, as defined by Matthew Barr, are online spaces where "community-spirit gamers meticulously document their gaming experience."¹³² Accordingly, Wikis have become a popular online reference-medium for gamers.¹³³ Fans of *Subnautica* created a specific tab for the ecological dead zone, called "Crater Edge."¹³⁴ This website provides information on the fauna, depth, temperature range, the function, data bank entry and trivia of *Subnautica*'s dead zone. At the end of the page, it states that the Wiki is created through the PDA entry, a video from a player exploring the area and information provided by the developers. The page thus follows the facts provided by *Subnautica*. However, the existing Wiki-page critically reflects on the misuse of the term "ecological dead zone." It mentions this area as "crater edge," instead of the dead zone. In the Trivia, the Wiki elaborates on this inaccuracy (Figure 13).

¹³¹ Consalvo, "When Paratexts Become Texts: De-centering the Game-as-text," 182.

¹³² Matthew Barr, "Learning Through Collaboration: Video Game Wikis," *International Journal of Social Media and Interactive Learning Environments* 2, no.2 (2014): 119-133.

¹³³ Barr, "Learning Through Collaboration: Video Game Wikis," 121-122.

¹³⁴ "Crater Edge," Wiki, Subnautica Fandom, accessed on March 19, 2024, https://subnautica.fandom.com/wiki/Crater_Edge.

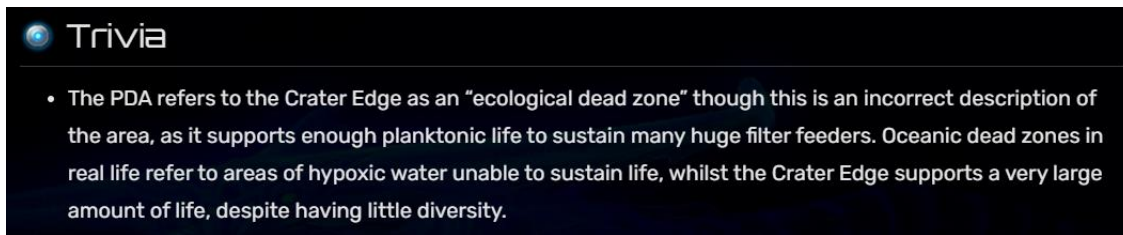


Figure 13. The Trivia on the Wiki of “crater edge” mentions the misconception in *Subnautica*.

Through this re-labelling and providing information on the misconception, the Wiki reframes the edge of the map as “crater edge” and “void.” It also emphasizes that the area does not accurately represent a dead zone since it supports “planktonic life.”¹³⁵ However, the Wiki wrongly states that dead zones are unable to sustain life, whilst in reality, they support types of algae.¹³⁶ Nonetheless, the description comes closer to describing existing ecological dead zones on Earth than the representation of *Subnautica*, which shows the area as an oceanic abyss filled with Leviathans. This critical manifestation of players on the Wiki, exemplifies what Barr describes as “inherently scholarly behaviour.”¹³⁷ Even though the information on existing dead zones was not completely accurate, the authors do display academic proficiency in researching the real-life application of the term. Thus, the Wiki contains a blend of critical thinking, research and fandom.

Furthermore, the Wiki frames the area as a biome through calling it the “void biome” and having the page be part of the Tab: “Biomes.”¹³⁸ So, even though the Wiki describes the dead zone as the border of *Subnautica*, it still frames it as a biome and thus, game content. Due to the lore of the zone, the detailed description, and gallery with images of the area, the Wiki regards crater edge as entertaining game content which players might be interested in to learn about. The Wiki hereby affords a form of learning for readers. However, it also affords learning for the Wiki-authors through collaborating and co-creating this (non-academic) literature. Ana Alacovska argues that this collaborative process in a shared project, like the Wiki-page, is driven by a love for online communities.¹³⁹ Unlike traditional text-production, Wiki-pages are constantly evolving digital artefacts which reference other Wiki-pages. This interconnectedness of Wiki’s, according to Alacovska, reflects the collaborative nature of

¹³⁵ “Crater Edge,” accessed on March 19, 2024.

¹³⁶ Altieri and Gedan, “Climate Change and Dead Zones,” 1395-1406.

¹³⁷ Barr, “Learning Through Collaboration: Video Game Wikis,” 5.

¹³⁸ “Biomes,” Wiki, *Subnautica Fandom*, accessed on March 22, 2024, [https://subnautica.fandom.com/wiki/Biomes_\(Subnautica\)](https://subnautica.fandom.com/wiki/Biomes_(Subnautica)).

¹³⁹ Ana Alacovska, “The History of Participatory Practices: Rethinking Media Genres in the History of User-Generated Content in 19th-century Travel Guidebooks,” *Media, Culture & Society* 39, no. 5 (2017): 661-679.

online communities.¹⁴⁰ Therefore, the creation, maintenance and updates of the Wiki “Crater Edge” exemplify this participatory management in the fan-community. Thus, the Wiki frames the dead zone from both a fan perspective that follows the game lore of *Subnautica*, and a scholarly-like perspective which through co-production remains critical on the conceptualization of the game’s environment.

Uncharted Territory: Fan-made Maps of *Subnautica*

Finally, another prominent example of user-generated content regarding *Subnautica* are fan-made maps of the game. Players also (re)frame the dead zone when they visually represent the game content. Since the game does not provide players with a map, content-creators make maps which show an overview of the crater. Just like the Wiki, it provides other players with information on the biomes, locations of resources, Leviathans and wrecks. However, as Alex Gekker rightly states: “map-making inherently entails processes of selection and generalization that renders certain aspects of its subject more prominent or hidden.”¹⁴¹ Hence, how players integrate the dead zone on maps is relevant in order to grasp how players see the game-world and the dead zone.

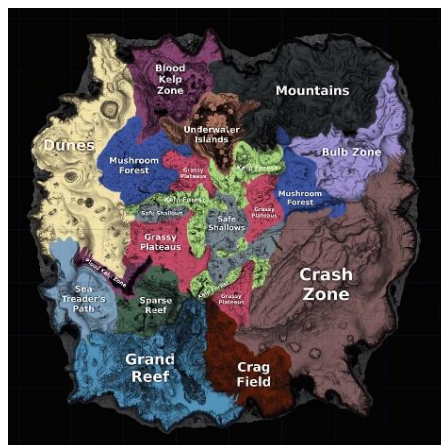


Figure 14. The Wiki “crater map” provides a basic overview of the crater in *Subnautica*. Many fan-made maps are adaptations of this map.

First of all, closely connected to the previously mentioned Subnautica-Wiki, several maps are versions of the Wiki’s “Crater Map.”¹⁴² It provides a basic overview of the crater and its biomes (Figure 14). It hereby excludes the ecological dead zone; the image besides the crater is black. An interesting example of an adaptation to it, is a map which visualizes where the

¹⁴⁰ Alacovska, “The History of Participatory Practices,” 664.

¹⁴¹ Alex Gekker, “(Mini) Mapping the Game-space: A Taxonomy of Control,” in *Playful Mapping in the Digital Age*, ed. Clancy Wilmott et al. (Amsterdam: Institute of Network Cultures, 2016): 134-155.

¹⁴² “Crater Map,” Wiki, Subnautica Fandom, accessed on March 22, 2024, https://subnautica.fandom.com/wiki/Crater_Map.

dangerous Leviathans are located on the crater (Figure 15). It hence aids players to avoid encountering them. However, the map does not show the Ghost Leviathans in the dead zone since it does not include the dead zone visually. The textual explanation at the side of the map merely mentions crater edge as one of the places where Leviathans live. It also shortly states to: “Avoid Crater Edge (Void), there is no reason to go there.”¹⁴³ In this manner, crater edge is not completely excluded from the game content but is framed as a negligible area and not a biome to explore.



Figure 15. The fan-made map applied the Wiki-map to highlight the locations of Ghost Leviathans in the game. It does not visualize this area or show the three Leviathans which roam it. Yet, notes on the side of the map inform players that Leviathans do inhabit this place. It also emphasizes that players should avoid the edge.

Moreover, the website Subnauticamap provides players with an interactive map of the crater on 4546B.¹⁴⁴ The map shows clickable biomes in a light-blue and the off-crater end of the map in a dark-blue (Figure 16 and 17). When the player clicks on a biome, the area turns orange and the tab on the side provides details on its depth range and content. It also links the Wiki-page of that specific biome. Players cannot click on the border to get information on the dead zone. Yet, searching for “Crater Edge” in the search tab on the left results in the “biome” of crater’s edge. The website displays a photo of two Leviathans, the depth range of 0-8000 meters and a link to the previously discussed Wiki-page. Typing in “dead zone,” “abyss,” or “void” does not show results. Nonetheless, the website automatically transports the searched

¹⁴³ “Map of All surface Leviathan Spawns [Spoilers],” Subnautica, Reddit, accessed on March 22, https://www.reddit.com/r/subnautica/comments/l672m0/map_of_all_surface_leviathan_spawns_spoilers/.

¹⁴⁴ “Subnautica,” Subnautica Map, accessed on March 23, 2024, <https://subnauticamap.io/>.

concept into the search tab on the Subnautica-Wiki. Thus, the map allows players to focus on what they are searching for. Yet, the ecological dead zone is excluded from these features.



Figure 16. Players can click on the biomes of interest on the interactive map.

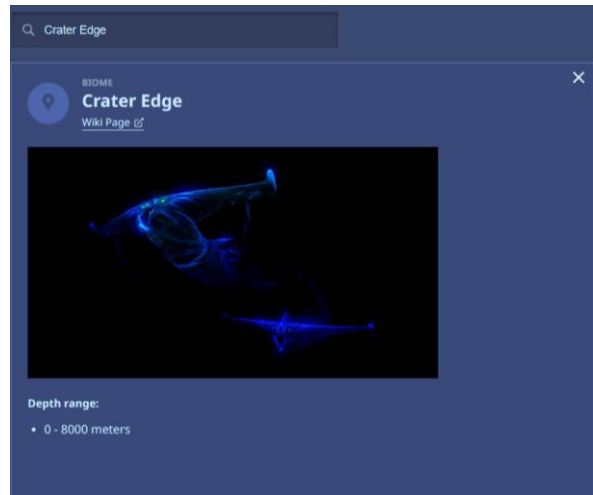


Figure 17. Searching “crater edge” results in a link to the Wiki-page, an image of Leviathans and the depth range.

Many other maps however visualize the biomes with different colours to provide an overview of the crater. The following map (Figure 18) similarly does so and focuses on what type of resources they contain.¹⁴⁵ It shows the outcrops, metals, plant samples, exploitable wrecks and where Leviathans roam the area. Interestingly, this map is one of the few which visualizes the dead zone beyond a line as the border.



Figure 18. The map provides a detailed description of resource-locations on the crater. It also indicates the “dead zone” both textually and visually through a darker colour blue which surrounds the crater.

¹⁴⁵ “Ingame Map with Resource Sheet,” Subnautica, Steam Community, shared by MMaster, accessed on March 26, 2024, <https://steamcommunity.com/sharedfiles/filedetails/?id=1184605358>.

The map uses a white line as the crater's border and uses a dark blue and a lighter blue to show that there is an ocean beyond the crater. On the four sides of the square-shaped crater, white letters boldly state: "DEAD ZONE." However, even though Leviathans roam this space as well, this is not visualized on the map.

This analysis thus exemplifies how maps of the crater provide an overview of what players regard as game content. As Gekker argues, each choice in the map's design "can be read as inscribing certain affordances into the game being explored and experienced."¹⁴⁶ Thus, the choice to not completely visually implement the dead zone, frames the ecological dead zone as devoid of relevant content for players. Yet, through providing information on the area and the acknowledgement of its existence, players aid each other in being aware of the threat posed by the dead zone. They frame the area to be avoided rather than explored; it is framed outside of the playable game-world. It highlights that players regard the dead zone as "dead" to them; it holds no value to them regarding resources.

The applied three-layered approach towards frames surrounding *Subnautica*'s dead zone reveals nuanced manners in which fans experience and contribute to the construction of meaning. Hopefully, this inclusive framework can be utilized in future studies to provide a comprehensive understanding of how and why (ecological) framing matters in videogames.

¹⁴⁶ Gekker, "(Mini) Mapping the Game-space," 135.

Conclusion and Critical Reflection

This study explored how *Subnautica* frames its ecological dead zone and how this is reflected in player-discussions and -framings in online user-discourses. The first sub-question hereby touched upon the framing of the dead zone in the game itself. According to the first analytical chapter, *Subnautica*'s dead zone disrupts established patterns of exploration on the crater through the silence, darkness, and a lack of resources. This defamiliarization of previously learned gameplay-habits forces players to confront their limitations in the environment. Procedurally, this deviates from the resource-exploitation ideology prevalent in other biomes, as Abraham observed in *Subnautica*. The dead zone offers no resources and limits player agency in gathering materials. Leviathans also further restrict exploration. Consequently, the dead zone is not framed a boundary, but rather as an intrinsic part of the environment. So, narratively the dead zone frames the entire crater, whilst functionally, it operates as a boundary. Similar to real-world dead zones, it is presented as an isolated and barren environment, separate from the rest of the world. This aligns with Lakoff's critique of an Environment Frame, where the environment is perceived as "separate from, and around, us."¹⁴⁷ Therefore, both in reality and in the game, the dead zone is regarded as the periphery. However, regardless of this similarity, *Subnautica* differs from connections to real-world ecological dead zones. The game's monster-filled abyss misrepresents complex energy flows, the causes and problematic aspects of these real-world phenomena, such as the depletion of oxygen in water which leads to death in other marine life. Therefore, while the dead zone compels players to evaluate their agency in the game, it presents a limited and misleading portrayal of dead zones on Earth.

Furthermore, the second sub-question and analytical chapter focused on how players respond to the dead zone through online user-discourses. Accordingly, *Subnautica*'s dead zone evokes a range of emotions in players, primarily fear and terror, but also curiosity. These emotions, which are associated with the concept of the sublime, are often managed through a fascination with danger; benign masochism, or humour. Discussions on Reddit and YouTube reveal the tendency to re-label the dead zone, e.g. with terms like "void," or, "abyss." This emphasizes the psychological impact and vastness over the ecological significance of it being an "ecological dead zone." This re-labelling can also be interpreted as an attempt to control the area. Re-labelling hereby strives to redefine their experience with the dead zone. However, players frequently misunderstand real-world dead zones in user-discourses, through

¹⁴⁷ Lakoff, "Why it Matters How We Frame the Environment," 76.

misinterpreting the game's logic as reality. Players focus on visual similarities between real-world abysses and *Subnautica*'s dead zone, overlooking the causes and nuances of genuine ecological dead zones. Additionally, the excitement expressed about real-world dead zones suggests a prioritization of wonder over environmental concern. Ultimately, while *Subnautica* excels at environmental immersion, players' misconceptions of crater's edge as an ecological dead zone overshadow the potential for ecological communication.

The final sub-question concerned online player (re)framings of the dead zone. The analysis of user-generated content reveals an interplay between the game-design, player-experiences and understandings. Firstly, let's play videos prioritize viewership by capitalizing on the dead zone's capacity to elicit emotional responses, framing it as thrilling content. Also, the focus on YouTuber's performances being scared, personalizes the issue and foregrounds their identity over potential environmental messages. The dead zone thus becomes a tool for self-performance. Moreover, fan-made maps reflect the player-perspective of prioritizing resource-gathering and technological progression. The dead zone is omitted as insignificant due to the absence of resources and presence of Leviathans. In contrast, the Wiki exhibits a more nuanced approach, critically reflecting on *Subnautica*'s inaccurate terminology and opting for "crater edge" and "void." This reframing demonstrates a degree of scholarly behaviour, attempting to align the game's representation with real-world ecological phenomena. Even though these efforts are limited due to an incorrect description about existing dead zones, the Wiki exemplifies the potential for games to spark curiosity about environmental issues and for players to take on scholarly-like perspectives towards them.

To conclude, *Subnautica* frames the dead zone as an exciting and scary environment, instead of creating an accurate portrayal of a genuine dead zone. Players then primarily grasp the concept through the lens of danger, usability and excitement, focusing on either the in-game economic value or entertainment value. The "dead" of the zone thus implies being deadly, or being "dead" to players, rather than making ecological implications. Let's players further amplify the focus on entertainment and use the dead zone to frame their identities as fun to watch. Other resources like fan-made maps and the game's Wiki also mostly prioritize providing information about the game content and thus refrain from environmental education or communication about genuine ecological dead zones.

Despite *Subnautica*'s missed opportunity for direct environmental messaging, this research reveals the significance of framing within video games. *Subnautica*'s engaged fanbase demonstrates the potential for games to spark discussions on environmental issues. Primarily, the critical aspects of the Wiki and humorous content like memes and comments

show that games can provide players with a foundation for environmental conversations. So, while *Subnautica* presents a limited environmental message, active player communities possess the power to extend conversations through discussions, creations and shared content. However, this specific analysis suggests that such conversations are unlikely to emerge spontaneously. For them to flourish, games could be applied in settings where people can be educated about environmental issues, such as educational YouTube channels who facilitate discussions around environmental themes in games. Here, discussions can be guided to encourage (eco)critical thinking and raise environmental awareness.

Framing (in) the Future: Ecological Games and Further Research

This research proposed an exploratory perspective on the ecological dead zone of *Subnautica* through the appliance of a framing analysis and through combining different types of material. This method can be adapted to research other ecological (diving) games with active fanbases like the recently announced third *Subnautica* game, to explore the potential identified in the analysis further.¹⁴⁸

For a more comprehensive study of this methodology's utility for further research, it is crucial to consider its limitations. Quantitatively, the corpus of this thesis may not be large enough to provide a more comprehensive overview of player experiences of the dead zone. Therefore, future research could benefit from a larger reception study. By adopting digital methods, such as a critical data study, research can delve deeper into, for instance, let's play videos and related comments. Qualitatively, through the focus on different types of content, the methodology of this thesis was limited regarding capturing direct responses from players to the dead zone, as the analysis focused on shared comments, threads and descriptions. Consequently, applying the methodology of ethnography or netnography in future research, can be complementary in grasping player understandings of environmental messages in games. These methods involve more direct interactions with players, thus facilitating the collection of more detailed information of players' cognitive and emotional responses to the game. Through addressing these limitations and applying the proposed methodologies in further research on various ecological games, researchers can gain a deeper understanding of how games can promote environmental awareness and inspire action beyond virtual worlds. By understanding this power in framing in relation to player communities, future ecological games can become effective tools for environmental education and advocacy.

¹⁴⁸ "An Update About the Next Subnautica," Subnautica, Unkownworld, posted in February 2024, accessed on April 4, 2024, <https://unknownworlds.com/subnautica/an-update-about-the-next-subnautica/>.

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Figure 1. “The biome in which players start on planet 4546B. The biome is filled with biodiverse and colourful flora and fauna.” Image from the Wiki “Safe Shallows.” Added by Gush958. Accessed on March 27, 2024.

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Figure 2. “The ecological dead zone of Subnautica. The area contains a vast ocean where life is sparse.” Image from the Wiki “Crater Edge.” Added by Morphguy. Accessed on March 27, 2024. https://subnautica.fandom.com/wiki/Crater_Edge.

Figure 3. “The PDA provides players with information on the ecological dead zone in Subnautica.” Screen capture made by author from *Subnautica*’s Data Bank Entry of the ecological dead zone. Captured on February 21, 2024.

Figure 4. “Two images collectively portray encountering the dead zone, which disrupts exploring the biomes in the game.” Image from the thread “Is It Just Me?” on the Subnautica subreddit. Posted by Gh0st_leviathon. Accessed on March 21, 2024.

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Figure 5. “A SpongeBob meme is applied to describe the dead zone’s darkness.” Image from the thread “[Spoilers] Me while in the ecological dead zone” on the Subnautica subreddit. Posted by asdfghjkl-676. Accessed on March 23, 2024.

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- Figure 9. “A player contemplates about the label of *Subnautica*’s dead zone.” Screenshot of a comment on the thread “Do you guys like to call it the Void, Dead Zone or Craters Edge?” Comment added by Skemati. Screenshot made by author on March 26, 2024. https://www.reddit.com/r/subnautica/comments/169tpz2/do_you_guys_like_to_call_it_the_void_dead_zone_or/.
- Figure 10. “A player focuses on the game logic of *Subnautica* to explain the dead zone to other players.” Screenshot of a comment on the thread “[SPOILERS] Now I know why it’s an ecological dead zone.” Comment added by dodgyhashbrown. Screenshot made by author on March 20, 2024. https://www.reddit.com/r/subnautica/comments/169tpz2/do_you_guys_like_to_call_it_the_void_dead_zone_or/.
- Figure 11. “A picture of the Baraccuda Lake from the thalassophobia subreddit is reposted in the Subnautica subreddit.” Image from the thread “[No spoilers] Warning: Entering ecological dead zone” on the Subnautica subreddit. Posted by Joel-kilgore. Accessed on March 13, 2024. https://www.reddit.com/r/subnautica/comments/fa5zis/no_spoilers_warning_entering_ecological_deadzone/.
- Figure 12. “A photo from an underwater cliff is connected to the ecological dead zone through the PDA quote of the game.” Image from the thread “Entering ecological dead zone” on the Subnautica subreddit. Posted by Diagbro. Accessed on March 13, 2024. https://www.reddit.com/r/subnautica/comments/9x7so7/entering_ecological_dead_zone/.
- Figure 13. “The Trivia on the Wiki of “crater edge” mentions the misconception in *Subnautica*.” Image of the Trivia of the Wiki “Crater Edge.” Screenshot taken by the author on March 19, 2024. https://subnautica.fandom.com/wiki/Crater_Edge.
- Figure 14. “The Wiki “crater map” provides a basic overview of the crater in *Subnautica*. Many fan-made maps are adaptations of this map.” Image from the Wiki “Crater Map.” Added by Bioness. Accessed on March 22, 2024. https://subnautica.fandom.com/wiki/Crater_Map?file=Subnautica_Labelled_Map_Zones_and_Textures.png.

Figure 15. “The fan-made map applied the Wiki-map to highlight the locations of Ghost Leviathans in the game. It does not visualize this area or show the three Leviathans which roam it. Yet, notes on the side of the map informs players that Leviathans do inhabit this place. It also emphasizes that players should avoid the edge.” Image from the thread “Map of All surface Leviathan Spawns [Spoilers].” Posted by Bioness. Accessed on March 22, 2024.
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Figure 18. “The map provides a detailed description of resource-locations on the crater. It also indicates the “dead zone” both textually and visually through a darker colour blue which surrounds the crater.” Image from the guide “Ingame Map with Resource Sheet” on *Subnautica*, Steam. Posted by MMaster. Accessed on March 26, 2024.
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Appendix B: Additional Images of *Subnautica*

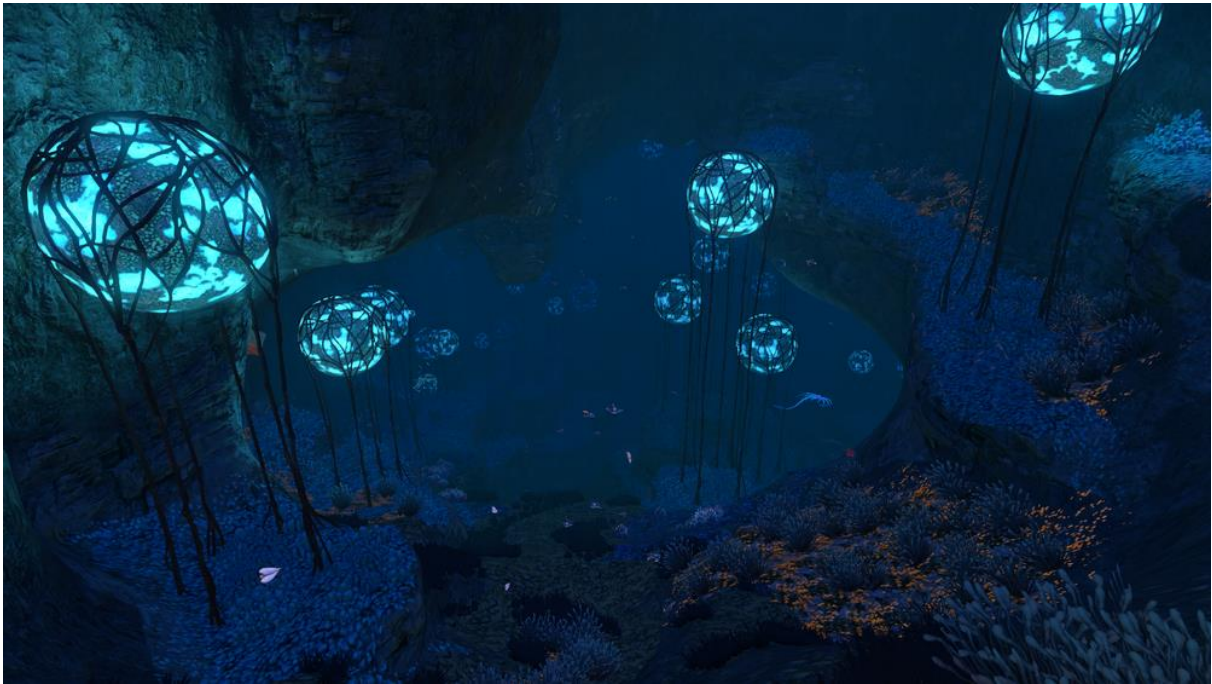


Figure C. 19. The Grand Reef in *Subnautica*. Image from the Wiki “The Grand Reef.” Added by Morphguy. Accessed on April 9, 2024.

https://subnautica.fandom.com/wiki/Grand_Reef?file=GR_Small_DGR_Opening.png.



Figure C. 20. One of the two Ghost Leviathans which roam the Grand Reef biome in *Subnautica*. Image from the Wiki “The Grand Reef.” Added by Morphguy. Accessed on April 9, 2024. https://subnautica.fandom.com/wiki/Grand_Reef?file=GR_GL_West.png.



Figure C. 21. The Lost River biome in *Subnautica*. Three Juvenile Ghost Leviathans inhabit the large area of the Lost River. Image from the Wiki “Lost River.” Added by Morphguy. Accessed on April 10, 2024.

https://subnautica.fandom.com/wiki/Lost_River?file=GL_BF.jpg.



Figure C. 22. The Lost River is also characterized by a green underwater river which runs through the entire biome. Image from the Wiki “Lost River.” Added by Morphguy. Accessed on April 10, 2024.

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