

---

## The Portrayal of Apocalypse in Jules Hogan's *Those They Left Behind*: An Ecocritical Analysis

Theresia Sekar Prabawati

[theresiasekarprabawati@mail.ugm.ac.id](mailto:theresiasekarprabawati@mail.ugm.ac.id)

Literature Master's Program, Universitas Gadjah Mada, INDONESIA

### Abstract

*Literary works can show problems in our life, such as the ones in the relationship between human beings and nature. Through this paper, the researcher aims to find out the portrayal of the apocalypse in a short story entitled *Those They Left Behind* by Jules Hogan. To reveal how the apocalypse is represented, there are two problems to answer: (1) how the condition of the environment is depicted in the story and (2) how the condition affects the characters. The study is qualitative research, applying the theory of ecocriticism proposed by Greg Garrard. The tropes discussed in this research are pollution, pastoral, and apocalypse. It is found that the apocalypse happened because of the great number of pollution, the rising cases of catastrophes, and modernization. Therefore, the Ascent project was established to send human beings to start a new life on another planet. The apocalyptic state affected the characters in significant ways. They had to change their lifestyles to survive, starting from recycling waste, living from natural resources, and finding ways to reduce pollution. The short story leaves the reader with the idea that if human beings do not change their ways, the Earth will eventually be destroyed.*

**Keywords:** *apocalypse; ecocriticism; pastoral; pollution; Those They Left Behind*

### Article information

Received:  
13 June 2022

Revised:  
5 December  
2022

Accepted:  
10 April 2023

---

### Introduction

Nature is always in a close relationship with human beings. This relationship can be represented through literary works. However, the issues addressed in today's literary works show the destructive acts of humans toward nature following the fact that Earth's condition is deteriorating. Many nations have declared climate emergency, such as Canada, the UK, the US, and Asian countries, including Japan and South Korea. Scientists have also disclosed a

number of research showing that the Earth's temperature has risen about 0.08° C per decade since 1880, putting 2020 the second-warmest year after 2016 (Lindsey & Dahlman, 2021). At this rate, human beings should be able to recognize that our civilization is facing serious environmental problems.

Many organizations are established to overcome environmental issues, which are institutionalized in Environmental Non-Government Organizations (ENGO).

Greenpeace is one of the ENGOs operating in Indonesia and other countries in Asia (Rozalina & Asmi, 2020, p. 108). Climate Action Network (CAN) is also an ENGO with a wider network of 90 countries around the world (p. 109). As mentioned earlier, fiction authors also contribute to widening our views on the destruction of nature through their works. One of them is Jules Hogan. She wrote *Those They Left Behind*, a short story published by Arizona State University in 2021, together with eight other authors' works in an anthology titled *Everything Change Vol. III: An Anthology of Climate Fiction*. The story tells about the three main characters facing the reality that they could not leave the Earth with the Ascent to Mars. They tried to survive living in Earth's dreadful state and accept their fate.

The emergence of literary works depicting the collapse of nature shows that literature and the environment cannot be separated. The study of literature and the environment has actually been getting attention since the beginning of the modern era. Ecocriticism has continued to exist "as a discipline that is connected to literary theory by the dual bridges of culture and science" (Bunting, 2015, p. 1), bringing the idea that "human culture is connected to the physical world, affecting it and affected by it" (Glotfelty, 1996, p. xix). Ecocriticism, according to Buell (2005, p. 318), is a critical perspective that looks at how literature and arts reflect or shape our understanding of the environment. Garrard agrees that ecocriticism is the study of the relationship between humans and non-humans "throughout human cultural history and entailing critical analysis of the term 'human' itself" (2004, p. 5). He also argues that scientific and cultural analysis is required to observe environmental problems. It is because those types of analysis are the result of an interaction between the knowledge of ecology and its cultural inflection (p. 16).

The ecocriticism approach is believed to be able to give a significant understanding of environmental problems through literary works which can "reinforce, enliven, and direct environmental concern" (Buell, Heise, & Thornber, 2011, p. 418). Therefore, using ecocriticism is important to examine the environment and society's treatment of it,

reflected in literary works. Several foci are available in using this approach to analyze a literary work. Garrard offers concepts of ecocriticism such as pollution, pastoral, wilderness, apocalypse, dwelling, animals, and the Earth. Three of the tropes will be discussed in this paper.

Before conducting this study, the researcher studied several papers on a similar topic. The first is a study entitled *Devastation of Earth: An Ecocriticism Study in Cormac McCarthy's The Road* conducted by Leksono & Inda (2013). This research observed the portrayal of Earth's devastation in the novel using modernism and postcolonialism as the supporting theories. The study found that the devastation of Earth happened in all layers of the environment, which are the land, the sea, and the sky. This condition led to the suffering of many people, especially the two main characters in the novel. Based on the analysis, the study did not apply postcolonialism theory to its fullest extent, and as a result, the outcome of the research was only about the condition of the main characters and the devastated environment described in the novel, without highlighting any colonialization nor postcolonial aspects.

Second, the study entitled *The Beginning of the End: An Ecocriticism Analysis on Clive Staples Lewis' The Chronicles of Narnia: The Last Battle* was conducted by Sungkono et al. (2015). The goals are to find the form of representation and treatment of nature and the animals, the depiction of natural disasters, and the ideological position of the author. Garrard's concept of ecocriticism is also used in analyzing the novel. The findings show that the mistreatment of nature results in an apocalypse. The story is influenced by the author's Christian ideology. The weakness of the study is that the Christian values which were said to influence the author's work are not mentioned and elaborated; thus, the claim is not yet proven in the analysis.

The last study is conducted by Ramadhanty & Retnaningdyah (2021). The research tried to find out the natural destruction and determine the causes of the destruction in the film. Employing Garrard's concept of ecocriticism and cinematography

theory, they found that natural destruction, namely water pollution and drought, is caused by industrial water exploitation and the issue of land ownership. It also revealed that human beings' exploitation of natural resources led to negative impacts on the environment. There are similarities in the concepts used between Ramadhanty & Retnaningdyah and this paper: pollution and apocalypse. However, how the environmental destruction is portrayed is analyzed differently since the object material used in their study is a film.

The differences between this study and the studies above are the material object and the goal. Hogan's *Those They Left Behind* is not yet studied using ecocriticism. Although several papers also employed the apocalypse trope, the result of this study will be different. While the others revealed how the environment got to the apocalyptic state, this study also aims to reveal how the characters tried to survive while still maintaining their awareness of the surrounding environment. Therefore, it brings out two questions (1) how is the condition of the environment depicted in the story? (2) how does it affect the characters, and how do they overcome it?

## Methodology

This is a descriptive qualitative study. A qualitative approach is used to explore and understand "the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2009, p. 209), involving data from various sources (Nassaji, 2015, p. 129). This approach produces descriptive data (Puspasari & Wiyatmi, 2020, p. 160), which will reveal how the apocalypse is depicted in the story. The primary source used is a short story entitled *Those They Left Behind* written by Jules Hogan. The data from the short story, which are the narrative and dialogues, are obtained through intensive reading. The forms of the data are sentences, clauses, phrases, and words that are related to the condition of the apocalyptic environment. They are later interpreted and analyzed using Garrard's theory of ecocriticism, mainly the pollution, pastoral, and apocalypse concepts. The final step is to draw conclusions from all the analyses made previously.

## Results and Discussion

The story is constructed from three main characters' perspectives: Masha's, Nandita's, and Naoko's. The three of them were the ones not included as passengers ("The Ascent") on spaceships that left for another planet, Mars. They encountered problems and difficulties staying on Earth because of its deteriorating condition. However, they still tried to strive and eventually succeeded in living a stable life while the Ascents were never heard from again. The two research questions will be discussed in this section using Garrard's theory of pollution, pastoral, and apocalypse.

### *The Condition of the Environment*

The story begins with Masha's point of view told by a narrator. The first line shows that people were leaving somewhere, but others stayed. At first, their destination is not specified, but it is described that those people were leaving Earth, as quoted below:

*Ivan thought the Ascents were a myth. They're sending them up there to die, he said. Or, those are empty ships. Lights. Blown-up space junk. (p. 99)*

Other than financial problems or being faithful to Earth's future, it turns out that the people chosen for the Ascent project were sorted by the United Earth Convention; only the ones who meet their criteria, who are able to benefit the new civilization, can board the ships. This act of sorting implied that the authority was enabled to decide someone's fate as if there were people who deserved to be saved and the rest who deserved to suffer from the apocalypse.

*They left behind the sick, the disabled, the blind and paraplegic and Deaf, unless you had some other immense talent. They left behind the poor, the un-bootstrapped. The imprisoned or once so, the very old, the very young. They left those who scored poorly on standardized tests, or personality tests, or those with a psychiatric condition. Those who tended to be radical, in any political direction, or who struggled with addiction: gambling, sex, alcohol, drugs, reality*

*television, pornography, salty foods, cycling, rhetorical debate. Those who participated in socially adverse behaviors, such as sexual depravity or smoking. (p. 100)*

From the quotations above, the establishment of the Ascent project indicates that the Earth has turned into an uncomfortable place for human beings to live. Fictions portraying apocalypse depict "the broad destruction of natural habitats and social systems" (Monaco, 2021, p. 9). The destruction was intolerable, that they planned to seek another place to start a new civilization, hence leaving in spaceships to find a proper place other than the Earth.

The narrator points out several reasons why the people were leaving Earth. The first one is the massive amount of pollution. Pollution is derived from the Latin word "*polluere*," which means "to defile." Pollution occurs when harmful materials, called pollutants, contaminate the natural environment. The pollutant can be in any form of any substance, solid, liquid, or gas. According to Garrard, it does not need to be named, and we do not have to specify what chemical substances are present. However, it does represent a normative claim that something is too much, and it is usually in the wrong place (2004, p. 6).

*They left behind towers of refuse, castles of waste. Soda bottles, pen caps, plastic bags that read thank you, thank you, thank you. Batteries: lithium-ion, computer, car, double-A, triple-A, watch, solar. Shiny snack wrappers and chip packets—Frito, Dorito, corn chip, Lay's, baked, BBQ, salt and vinegar, Cajun twist. Lightbulbs with broken filaments, icebergs of Styrofoam, rumpled silk ties, black plastic bags of chicken bones, unused sheet metal, wooden packing pallets. We scavenged and scrapped; we were like vultures surrounded by all these relics. (p. 100)*

The narrator mentioned the things that people use daily as pollutants, like batteries and snack wrappers, which means the habit of the people could not be separated from the act of destruction toward nature. It is implied that

the products may be trivial for the consumers, but they are harmful to the environment.

The depiction of the piling-up pollution is also seen through Nandita's job. She collected lithium batteries for a living, so she regularly visited the landfill. From that, she started collecting other forms of waste to make mosaics.

*Nandita was building the ocean for her mother. She still hated her job, but it had gotten better since she learned to make her mosaics. She found the supplies in the landfill. Old photographs, jewelry, broken glass. Fragments of computer chips like alien maps. Magazines and tubes of dried paint, which she ground down and mixed with oil. She collected sheets of plastic, colorful cellophane, sometimes finding more of this than her batteries. (p. 106)*

The quotations above show that human civilization invented and produced a lot of goods that cannot be easily degraded but never anticipated the long-term effect caused by the products, which are detrimental to the environment. For the sake of efficiency, humans created numerous kinds of appliances, such as plastic bags and other disposable containers. Plastics are even still used despite being one the hard-to-handle wastes, which naturally needs up to 600 years, because of the functions and characteristics that could not yet be replaced by other materials (Hidayat et al., 2019, p. 351). From this fact, it can be learned that human activities compromise the well-being of nature for their own convenience.

The second reason is that many kinds of disasters have started to happen on Earth. Climate change can cause food shortages because it affects the weather and temperature. The rising temperatures and erratic weather contribute to the decline in livestock, reduced groundwater resources, and problems in sanitation (OCHA, 2021). Olabanji et al. also emphasized that climate change significantly affects the Earth in the increased frequency of droughts and floods because of the shifts in the climate system (2020, p. 1). All of the disasters mentioned in this quotation are climate change-related.

*They left behind such destruction, is how the story started. Famines in Yemen, Syria, Bangladesh, the Navajo Nation, Pakistan, Uruguay, Sudan. Droughts and wars over water rights and melting glaciers. Super-tornadoes and hurricanes and an untrustworthy Gulf Stream. Wildfires and mudslides and floods and pandemics. Rivers choked in poison, thirst-stricken cities, blighted fields of monocrops. (p. 102)*

After a while, several conditions were starting to get better. However, it is described that there were still some cases that were difficult to be resolved, as shown from Masha's point of view in this quotation below:

*Viruses spangled through the world, a drought precipitated another famine, carbon dioxide numbers were down. A woman drove all her kids off a bridge, the feds were regulating methane production, the ocean was seeing more growth than it had in decades. The Arctic ice was still melting, kelp forests expanded, income-assistance programs were proving successful. She learned all she could over the course of one beer and then she left, unable to listen any longer. (p. 110)*

She listened to the news in a bar. The mentioning of those natural catastrophes that occurred is to show that the issues were the aftermath of human beings' destructive activities toward nature. Garrard stated that the environmental issues were reported by the media as catastrophes to create drama and generate human interest and also "because news more easily reports events than processes" (2004, p. 105).

The third reason is modernization. Human activities are affected by the rapid development of technology. We rely on the presence of sophisticated gadgets and leave the traditional habits that are considered impractical. However, this attitude is causing human beings to leave behind their natural ways of living slowly.

*She'd never seen the ocean, but she used photos pulled up on her holoscreen. Her mother once tried to describe it, the*

*constant roar, the rancor of the gulls. "You can't recreate it on screens or VR," her mother said. "Maybe one day we can go there." (pp. 106-107)*

Before VR was created, people had to travel miles away from the city to visit the ocean. Nandita never felt the natural ambiance of the ocean in person, unlike her mother, who used to visit the place directly. Similar to Naoko in the quotation below, she also relied on technology to observe marine animals.

*As a child, Naoko loved to visit VR aquariums and watch the animals that lived in the deepest seas. (p.108)*

However, the production and usage of gadgets like VR leave a recognizable amount of carbon footprint. According to Sloma (2013), 1.3% of global gas emissions are produced by the technology sector, and the media sector contributed to producing 1.7% within one production cycle in 2007. The numbers may look insignificant compared to the carbon footprint emitted by industries or transportation, but even the smallest ones could affect the environment if they are continuously used. Moreover, the technology in the short story has been used and developed repeatedly for a long time ago, since the story is set in the future.

Other than that, modernization also enabled people to produce advanced, hazardous weapons. Human beings killed their own kind using those weapons in wars, as seen through these lines.

*They left their means of destruction—their hypersonic weapon systems and aircraft carriers. A horrific, kaleidoscopic array of guns. Fields of sleeping F-35s, the fleet of the US Navy slowly rusting in the Pacific. The metal cages and concrete prisons, the lists of human numbers, each one a heartbeat. They left behind their maps and borders and border security, their geo-positioning-systems, their geography. It would have been so easy, to replay our history in all its delightful violence, to reject every lesson and fable, to become our worst enemies. They left the nuclear warheads and missiles and red buttons. They left us*

*the blueprint for destroying ourselves.*  
(p.109)

As mentioned previously, modernization allowed people to invent useful tools that could ease their activities. Nevertheless, it also allowed human beings to create their own catastrophic events. Missiles, nuclear weapons, and other kinds of guns can cause significant damage not only to people but also to the environment. It is explained that nuclear conflicts can lead to global calamities such as reductions in agricultural products, the loss of stratospheric ozone, and of course, the spreading of dangerous radioactive fallout (Liska et al., 2017, p. 22). In this sense, modernization enabled people to set their own apocalypse.

### ***The Impact of the Apocalypse on the Characters***

The concept of apocalypse, according to Garrard (2004), is the realization that the world is not going to end. Human beings would survive but not civilization, showing the moral dualism dividing the world into "friend" and "enemy," and it also emphasizes "upon the 'unveiling' of trans-historical truth and the corresponding role of believers as the ones to whom, and for whom, the veil of history is rent," (p. 86). It is bound up with imagination because the apocalypse has yet to occur. Buell (via Garrard, 2019, p. 2) argues that apocalypse is the most powerful metaphor "that the contemporary environmental imagination has at its disposal" as it is able to show terrifying warnings vividly.

Masha and her father could not afford to leave with the spaceships. They learned that the Earth's condition was getting worse from the news about how the military was concerned more about planting trees rather than strengthening their nation's defense. It shows that the critical threats were not from riots or wars anymore but from nature itself.

*For eight hours a day, he sat in front of his holoscreen, switching from coffee to bourbon, watching as the world fell apart. When Masha was home from the restaurant, she worked under a barrage of his commentary.*

*"They're turning the military into some goddamned Eco-cult, Masha. Planting trees! What are we supposed to do in a war? Tree them to death? We're fucked, Masha." When the United Earth Convention opened all the borders to anyone with an Earth passport, Ivan, who called it "Uck," almost had an embolism. "They're going to completely override us," he grumbled. "We might as well just shoot ourselves in the mouth." (p. 104)*

In addition, they were frightened because they knew they could not leave the Earth despite its horrible condition. Hence, they were angry. Ivan realized that being left behind equals dying slowly, which is why he thought it was better to commit suicide rather than live in torment in a world that was falling apart. The passage above portrays the social psychology of "paranoia and violence" (Garrard, 2004, p. 86), which indicates the society's attitude in an apocalyptic state.

The father and daughter ran a restaurant in a small town. The quotation below shows that the challenge they were faced with was the food shortage which made them close their restaurant.

*It grew harder to run a restaurant. Coffee went first, and though Masha experimented with the lab-grown varieties populating the shelf, it was never quite as popular. When the meat subsidies shut down and ground chuck became eighty-eight dollars a pound, she shut down the kitchen entirely. (p. 105)*

After selling the restaurant, Masha took her father to move to a farmhouse away from the city. Instead of only processing the ingredients, Masha had to grow them herself. She aimed for a pastoral life, as shown in this passage.

*She grew pumpkins and squash and melons and beans, radishes and cucumbers and peppers and corn, she traded eggs from their chickens for flour and sugar, ate berries straight from the bramble, and wore her hair in a tight braid down her back. (p. 109)*

Pastoral tradition in literature, as Gifford stated, is divided into three kinds which are the classical pastoral: the retreat from the city to the countryside, the contrasting of a country with the urban through the explicit or implicit description, and "the pejorative sense in which 'pastoral' implies an idealization of rural life that obscures the realities of labor and hardship," (p. 33).

Gifford (2004) explained that living a rural life may seem ideal, but it "obscures" the hardship faced by the person. It took a while for Marsha to adapt and learn to manage her mini-farm. Their lifestyle was drastically changed. Masha felt that life in the city was so hectic. Ivan finally started to read actual books instead of holoscreens. They also had fun and peaceful interactions with the neighbors. This paragraph below tells that life at the farm was not as individualized as it was in the city.

*As her skills grew stronger and as Ivan grew healthier, their garden and goat pastures spread, and Masha took to feeding the families around her. The bustle reminded her of the rush of running a restaurant, but often after dinner, people stayed to tell stories and chat with their neighbors, strum guitars and mandolins and ukuleles. Late into the night, they stayed and sang and shared, until all the stars glimmered above them and the moon began to sink into its holler between the hills. (p. 110)*

After bearing the drastic changes, the quotation tells that their life at the farm was happier and more relaxed than it was in the city. By contrasting Masha's pastoral and city life, it implies that being closer to nature (direct interaction with other human beings, eating minimally processed food, etc.) is a better way of living rather than being assisted with modern technology (virtual meetings, consuming ultra-processed food, etc.).

Nandita also overcame difficult circumstances because of the nearly ending world. After the establishment of the Ascent project, Nandita planned to leave. However, her mother did not allow her without giving explanations. She was angry, blaming the apocalypse as the result of the older

generations' doings (p. 101). In reality, industrialization, which started around the 18-19th century, indeed created a major contribution to climate change. By the mid-20th century, it was noticeable that the greenhouse gasses produced by human activities were "the most significant driver of observable climate change" (Mgbemene et al., 2016).

As discussed before, Nandita's job was collecting lithium batteries from the landfill. She soon started to recycle other wastes she found to make mosaics, the first one being an ocean mosaic for her mother. Her art was then sold and got viral, so she could finally open her own gallery. She stopped collecting the batteries and lived off selling her mosaics. Not only she made a living from waste, but she also contributed to recycling them, which could help reduce the amount of pollution.

*Her mosaics of sea turtles and elephants and golden lion tamarins, created out of trash, garnered a lot of attention from local magazines and tourist papers. A video was made and went viral. Soon, Nandita had more orders than she could account for, each new piece replacing one that had sold. (p. 111)*

The third character, Naoko, was scheduled to depart with her fellow physicists as a bioengineer. She was already at the station, but she decided to cancel the trip, and her ticket was then given to another person (p. 102). One of the reasons behind the cancellation was because of her parents. She was afraid that nobody would take care of them. Leaving her parents means leaving them to suffer.

*If she'd Ascended to the stars, would her parents be able to hire nurses or aides? Would her lab be as successful without her? These were the questions she couldn't bear and this is why she stayed. (p. 108)*

The other reason was that she could not leave her job as a bioengineer. She then decided to stay on Earth and still tried to improve its condition. She kept designing gadgets that could improve the environment.

*In her lab, Naoko designed graphene nets that removed pollution from the ocean currents and resembled siphonophores; floating islands that could hold crops or livestock or people; turbines that harvested energy from the tides. (p. 108)*

From the discussion above, the idea of the apocalypse created fears and worries in the three of the characters. They feared the destruction would cost them their lives, including their parents. The condition also forced them to survive as they suffered amidst the chaos. Masha did not see any better scenarios if she kept living in the city, running the restaurant, the struggle to find food resources, so she moved away and chose to live a pastoral life with Ivan. Nandita hated her job of sorting trash to collect batteries. After learning to create mosaics from waste, she started to sell them since it would be more difficult to find unused batteries as a full-time job with the departure of many people from Earth. Naoko's life did not change a lot. She still worked as a bioengineer. She was supposed to ascent but canceled it at the last minute as she was worried about her parents. Instead of contributing her knowledge to build a new civilization, she chose to create more devices that could slowly fix the Earth's condition.

## Conclusion

The apocalypse in this short story is hinted at through the Ascent project, sending human beings to Mars to establish a new civilization in a better place. It shows that the apocalypse is thought to happen since the Earth portrayed in the story was in a bad place caused by the boundless pollution, the huge number of catastrophes that were climate-change related, and modernization. Those conditions led many people to leave the Earth as it seemed that it was too late to improve the destructed environment. It then brought the idea that the world would end any sooner, hence the establishment of the Ascent project.

In that condition, the characters from the story tried to strive despite the deteriorating conditions of the Earth. Under much pressure, fears, and an uncertain future, the three of them decided to continue living a new lifestyle that brought them closer to nature. Masha

moved to a farmhouse, living a pastoral life. Nandita started recycling the waste as materials for her commercial art. As a bioengineer, Naoko kept on designing equipment that could repair the environment.

The story ends without any description of the actual, complete destruction of the Earth. In accordance with Garrard's theory of apocalypse, *Those They Left Behind* shows that people can survive in the apocalyptic state but not civilization. The characters had to quit relying on the technology that corrupted the earth and started changing their lifestyle to traditional life. The short story can be a lesson for human beings to be more considerate of the environment to prevent the apocalypse from happening.

## References

- Buell, L. (2005). *The Future of Environmental Criticism: Environmental Crisis and Literary Imagination*. Oxford, UK: Blackwell Publishing Ltd.
- Buell, L., Heise, U. K., & Thornber, K. (2011). *Literature and Environment. Annual Review of Environment and Resources, 36(1), 417-440*. doi:10.1146/annurev-environ-111109-144855
- Bunting, B. S. (2015). Nature as Ecology: Toward a More Constructive Ecocriticism. *Journal of Ecocriticism, 7(1), 1-16*.
- Climate emergency declaration*. Retrieved from [https://en.wikipedia.org/wiki/Climate\\_emergency\\_declaration#:~:text=A%20climate%20emergency%20declaration%20or,local%20government%20in%20December%202016](https://en.wikipedia.org/wiki/Climate_emergency_declaration#:~:text=A%20climate%20emergency%20declaration%20or,local%20government%20in%20December%202016) on May 2, 2022.
- Creswell, J. W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* (3rd ed.). Thousand Oaks, CA: Sage Publications.
- Garrard, G. (2004). *Ecocriticism*. London: Routledge.



- Garrard, G. (2019). Never too soon, always too late: Reflections on climate temporality. *Wiley Interdisciplinary Reviews: Climate Change*. doi:10.1002/wcc.605
- Glotfelty, C., Fromm, H., Le Guin, U. K., Kolodny, A., Allen, P. G., & Silko, L. M. (1996). *The Ecocriticism Reader: Landmarks in Literary Ecology*. Georgia: University of Georgia Press.
- Hidayat, A. Y., Kiranamahsa, S., & Arya Z., M. (2019). A study of Plastic Waste Management Effectiveness in Indonesia industries. *AIMS Energy*, 7(3), 350-370. doi:10.3934/energy.2019.3.350
- Hogan, J. (2021). "Those They Left Behind". *Everything Change: An Anthology of Climate Fiction, Volume III* Ed. by Dell, A., Eschrich, J. Arizona State University.
- Leksono, F., Inda, F. (2013). Devastation of Earth: an Ecocriticism Study in Cormac McCarthy's *The Road*. *LITERA KULTURA: Journal of Literary and Cultural Studies*, 1(3).  
<https://doi.org/10.26740/lk.v1i3.4206>
- Lindsey, R., Dahlman, L. (2021). *Climate Change: Global Temperature*. NOAA. Retrieved from  
<https://www.climate.gov/newsfeatures/understanding-climate/climate-change-globaltemperature#:~:text=Earth's%20emperature%20has%20risen%20by,land%20areas%20were%20record%20war m>
- Liska, A. J., White, T. R., Holley, E. R.; Oglesby, R. J. (2017). *Nuclear Weapons in a Changing Climate: Probability, Increasing Risks, and Perception*. *Environment: Science and Policy for Sustainable Development*, 59(4), 22-23. doi:10.1080/00139157.2017.1325300
- Mgbemene, C. A., Nnaji, C. C., & Nwozor, C. (2016). Industrialization and its Backlash: Focus on Climate Change and its Consequences. *Journal of Environmental Science and Technology*, 9: 301-316.  
Doi: 10.3923/jest.2016.301.316
- Monaco. (2021). *Archives of Environmental Apocalypse in Sarah Moss's Cold Earth: Archaeology, Viruses, and Melancholia*. *ISLE: Interdisciplinary Studies in Literature and Environment*.  
<https://doi.org/10.1093/isle/isab017>
- Nassaji, H. (2015). Qualitative and descriptive research: Data type versus data analysis. *Language Teaching Research* 19(2) 129–132. Doi: 10.1177/1362168815572747
- OCHA. (2021). *Climate change: A hunger crisis in the making*. Retrieved on May 6, 2022, from ReliefWeb by United Nations Office for the Coordination of Humanitarian Affairs.
- Olabanji, M. F., Ndarana, T., & Davis, N. (2020). Impact of climate change on crop production and potential adaptive measures in the Olifants catchment, South Africa. *Climate*, 9(1), 6. doi:10.3390/cli9010006
- Puspasari, R., & Wiyatmi, W. (2020). Learning Environmental Ethics from "Sebuah Wilayah yang Tidak Ada di Google Earth" by Pandu Hamzah. *Journal of Language and Literature*, 20(1), 159. doi:<https://doi.org/10.24071/joll.v20i1.2385>
- Ramadhanty, L. D., Retnaningdyah, P. (2021). Natural Destruction in Steven Soderbergh's *Erin Brockovich* (2000). *Journal of English Language Learning (JELL)*, Vol. 5 No 1, 63-71. Retrieved from <https://www.jurnal.unma.ac.id/index.php/JELL/article/viewFile/3098/2228>
- Rozalinna, G. M., & Aulia Izzah Azmi. (2020). Evaluation of Boundary-Spanning on Climate Change ENGO International Greenpeace in Asia. *Indonesian Journal of Social and Environmental Issues (IJSEI)*, 1(2), 108-121.  
<https://doi.org/10.47540/ijsei.v1i2.48>
- Sloma, M. (2013). *Carbon footprint of electronic devices*. *Electron Technology Conference 2013*. doi:10.1117/12.2030271
- Sungkono, W. et al. (2015). The Beginning of the End: An Ecocriticism Analysis on Clive Staples Lewis' *The Chronicles of Narnia: The Last Battle*. *Artikel Ilmiah Mahasiswa Universitas Jember*.