

**ECOLOGICAL APOCALYPSE IN PETER BROWN'S *THE
WILD ROBOT PROTECTS*: AN ECOCRITICAL ANALYSIS**

THESIS

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FACULTY OF HUMANITIES

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ECOLOGICAL APOCALYPSE IN PETER BROWN'S *THE WILD ROBOT PROTECTS*: AN ECOCRITICAL ANALYSIS

THESIS

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MALANG**

2024

STATEMENT OF AUTHORSHIP

I state that the thesis entitled “**Ecological Apocalypse in Peter Brown’s *The Wild Robot Protects: An Ecocritical Analysis***” by Peter Brown” is my original work. I do not include any materials previously written by another person except those cited as references and written in the bibliography. If there is an objection or claim, I am the only person responsible for that.

Malang, 07 November 2024

The Researcher,

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Abie Fauzan


APPROVAL SHEET

This is to certify that Abie Fauzan's thesis entitled "Ecological Apocalypse in Peter Brown's *The Wild Robot Protects: An Ecocritical Analysis*" has been approved for thesis examination at the faculty of humanities, Universitas Islam Negeri Maulana Malik Ibrahim Malang, as one of the requirements for the degree of *Sarjana Sastra* (S.S.).


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MOTTO

What was zero today will no longer be zero tomorrow.
(Baarscher 1996)

DEDICATION

This thesis is sincerely dedicated to:

Abie Fauzan, who never give up to complete this thesis

Mr Mendi S and Mrs Euis Indriati, who always pray and support in every step

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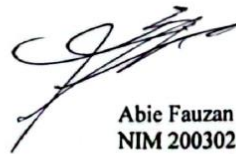
Alhamdulillahirobbil' alamin. All my praises and my gratitude are extended to Allah SWT who always bestowed His grace and guidance upon me. Shalawat and Salam belong to the Prophet Muhammad SAW who has led us to the right path in life. With all blessings and opportunities, the researcher can complete this entitled "Ecological Apocalypse in Peter Brown's *The Wild Robot Protects: An Ecocritical Analysis*".

I would like to present my special thank to:

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5. All of my friends. Thank you for everything.

Finally, this thesis still has many weaknesses in some ways. Therefore, any criticism and suggestion are welcome to improve this thesis.

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ABSTRACT

Fauzan, Abie (2024). *Ecological Apocalypse in Peter Brown's The Wild Robot Protects: An Ecocritical Analysis*. Undergraduate Thesis. Department of English Literature, Faculty of Humanities, Universitas Islam Negeri Maulana Malik Ibrahim Malang. Advisor: Muhammad Edy Thoyib, M.A.

Keywords: ecological apocalypse, pollution, ecocriticism

The phenomenon of ecological apocalypse refers to the collapse of ecosystems and environments caused by human actions, such as overexploitation of natural resources and pollution. The novel *The Wild Robot Protects*, written by Peter Brown, clearly depicts the exploitation of nature caused by the mining of metal minerals in the sea. This study aims to analyze the forms of ecological apocalypse, such as depletion of natural resources, natural imbalance, as well as the impact of the ecological apocalypse, namely environmental damage in the form of pollution, habitat destruction, and loss of biodiversity and the main character's efforts to stop the ecological apocalypse by applying the principles of environmental ethics, such as the responsibility to protect nature and maintain ecosystem balance, which reflects the importance of ecological awareness in maintaining the sustainability of nature in the novel. This study employs literary criticism using Greg Garrard's ecocritical theory and Keraf's theory of environmental ethics, which specifically focuses on the concept of ecological apocalypse and the resolution of environmental problems in the novel. The results of the analysis show that human actions, especially through overexploitation of resources, contribute to significant ecological damage. These phenomena include the depletion of natural resources and the imbalance of the ecosystem that impacts the surrounding life. Through the main character, the novel depicts various attempts to stop the apocalyptic process caused by overexploitation, thus providing hope for environmental restoration.

ABSTRAK

Fauzan, Abie (2024). *Kiamat Ekologis dalam The Wild Robot Protects karya Peter Brown: Sebuah Analisis Ekokritik*. Skripsi. Program Studi Sastra Inggris, Fakultas Humaniora, Universitas Islam Negeri Maulana Malik Ibrahim Malang. Pembimbing: Muhammad Edy Thoyib, M.A.

Kata kunci: kiamat ekologi, polusi, ekokritik

Fenomena kiamat ekologis mengacu pada runtuhnya ekosistem dan lingkungan yang disebabkan oleh tindakan manusia, seperti eksploitasi sumber daya alam yang berlebihan dan polusi. Novel *The Wild Robot Protects* yang ditulis oleh Peter Brown menggambarkan dengan jelas eksploitasi alam yang disebabkan oleh penambangan mineral logam di laut. Penelitian ini bertujuan untuk menganalisis bentuk-bentuk kiamat ekologis seperti penepisan sumber daya alam, ketidakseimbangan alam, serta dampak dari kiamat ekologis yaitu kerusakan lingkungan yang berupa polusi, kerusakan habitat, dan hilangnya keanekaragaman hayati dan upaya karakter utama menghentikan kiamat ekologis dengan menerapkan prinsip-prinsip etika lingkungan, seperti tanggung jawab untuk melindungi alam dan mempertahankan keseimbangan ekosistem, yang mencerminkan pentingnya kesadaran ekologis dalam menjaga keberlanjutan alam dalam novel tersebut. Penelitian ini menggunakan kritik sastra dengan menggunakan teori ekokritik Greg Garrard dan teori etika lingkungan oleh Keraf, yang secara khusus berfokus pada konsep kiamat ekologis dan penyelesaian masalah lingkungan dalam novel tersebut. Hasil analisis menunjukkan bahwa tindakan manusia, terutama melalui eksploitasi sumber daya yang berlebihan, berkontribusi pada kerusakan ekologi yang signifikan. Fenomena ini meliputi menipisnya sumber daya alam dan ketidakseimbangan ekosistem yang berdampak pada kehidupan di sekitarnya. Melalui tokoh utama, novel ini menggambarkan berbagai upaya untuk menghentikan proses apokaliptik yang disebabkan oleh eksploitasi berlebihan, sehingga memberikan harapan bagi pemulihan lingkungan.

مستخلص البحث

فوزان، آبي (2024). نهاية العالم الإيكولوجية في رواية الروبوت البري يحمي بيتر براون: تحليل نقدي بيئي. أطروحة جامعية. قسم الأدب الإنجليزي، كلية العلوم الإنسانية، جامعة مولانا مالك إبراهيم الإسلامية الحكومية مالانج. المشرف: محمد إيدي طيب، ماجستير في الآداب.

الكلمات المفتاحية: نهاية العالم الإيكولوجية، التلوث، النقد البيئي

يشير مفهوم الكارثة البيئية إلى انهيار النظم البيئية والبيئة الناجم عن أفعال البشر، مثل الاستغلال المفرط للموارد الطبيعية والتلوث. تصور رواية *The Wild Robot Protects* التي كتبها Peter Brown تصور استغلال الطبيعة الناتج عن تعدين المعادن في البحار. تهدف هذا البحث إلى تحليل أشكال الكارثة البيئية مثل استنزاف الموارد الطبيعية، واختلال التوازن البيئي، وتأثيرات الكارثة البيئية المتمثلة في التلوث، وتدمير الموائل، وفقدان التنوع البيولوجي كما تسلط الضوء على جهود الشخصية الرئيسية في إيقاف الكارثة البيئية من خلال تطبيق مبادئ الأخلاقيات البيئية، مثل المسؤولية لحماية الطبيعة والحفاظ على توازن النظم البيئية، مما يعكس أهمية الوعي البيئي في الحفاظ على استدامة الطبيعة كما ورد في الرواية. تستخدم هذا البحث النقد الأدبي باستخدام نظرية النقد البيئي لـ Greg Garrard ونظرية الأخلاقيات البيئية لـ Keraf، مع التركيز بشكل خاص على مفهوم الكارثة البيئية وحلول المشكلات البيئية في الرواية. تظهر نتائج التحليل أن أفعال البشر، وخاصة من خلال الاستغلال المفرط للموارد، تساهم في إلحاق أضرار بيئية كبيرة. تشمل هذه الظواهر استنزاف الموارد الطبيعية واختلال التوازن البيئي الذي يؤثر على الكائنات حول البيئة. ومن خلال الشخصية الرئيسية، تصور الرواية مختلف الجهود المبذولة لوقف العمليات الكارثية الناجمة عن الاستغلال المفرط، مما يقدم أملاً في استعادة البيئة.

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CHAPTER I

INTRODUCTION

This chapter presents some points of explanation, including the background of the study, the problems of the study, the significance of the study, the scope and limitations of the study, and the definition of key terms.

A. Background of the Study

Ecology is the scientific study of how plants, animals, and humans interact with each other and with the environment in which they live (Santoso et al., 2020). In human survival, nature is an essential factor in determining that nature is sustainable. Therefore, nature has an essential role in human life (Putra, 2016). Various types of life live on this earth, namely humans, animals, and nature (Manullang et al., 2021). Although different, all are interconnected and interdependent. Humans have an essential role on this earth for the survival of other entities; therefore, humans must respect the boundaries of the Earth (Grumbach & Hamant, 2020).

Due to this reciprocal relationship, humans live in nature, which means that they are surrounded by nature and interact with each other (Garrard, 2004). Humans who control nature should preserve and protect it for future generations. Humans and nature are interrelated, and that relationship will not continue if we do not take care of each other. The meaning of being related to each other is that humans depend on nature for survival, such as water, food, and air. On the other hand, humans have a significant influence in controlling the natural environment itself based on the

actions taken by humans on nature. Nature can also impact humans, as seen in natural disasters and environmental damage that affect human well-being.

Until now, the only planet known to be able to allow life is Earth. Life can survive on this planet only because of nature. Nature provides humans with the resources to live, such as animals, plants, liquid water, oxygen, and sunlight. Because of the many resources that nature provides to humans, it is essential to maintain and protect nature so that the ecology remains sustainable. Environmental disasters are now a significant problem in the world. Rapid exploitation and increasing energy consumption are the leading causes of environmental disasters (Manullang et al., 2021).

One recent issue that reflects the impact of natural resource exploitation is deep-sea mining, which CNBC reports has sparked global debate regarding its impact on the environment. Deep-sea mineral mining, which involves extracting polymetallic nodules from the seafloor using heavy machinery, has been feared to damage fragile marine ecosystems. Several countries and environmental organizations have called for a halt to such mining, as the potential damage is not yet fully understood. These concerns are further reinforced by recent scientific findings on the ecological risks generated by deep-sea mining activities (Meredith, 2024)

The importance of nature extends beyond practical survival. It also permeates human culture and expression, including literature. Since ancient times, the theme of nature has been mentioned in many literary works. Ecocriticism is demonstrated

in poetry, drama, fiction, and other literary works. The basis of ecocriticism is that every object can be seen as part of an ecological network. This critical approach can use ecology as a supporting science (Supian et al., 2022). Ecocriticism involves applying ecological principles to the study of literature and theory, examining how natural, cultural, and sometimes supernatural elements are interconnected. It seeks to explore environmental themes in literary works and theoretical discourse while considering language as a medium for expressing ecological ideas (Sahu, 2014).

As society's attention to environmental problems increases, ecocriticism has become essential in literary works and environmental criticism. Ecocriticism combines literary methodology and ecological perspectives and explores the relationship between humans and the environment, including pollution, wilderness, apocalypse, dwelling, animals, and the earth (Garrard, 2004). Unfortunately, many people have unwittingly applied the concept of anthropocentrism, namely a view that places humans at the centre of everything, because they do not understand how ecological disasters, such as environmental damage, ecosystem balance, and population extinction, are caused by the accumulation of small actions (Aramian, 2022). These environmental issues have been raised in various discussion forums and written works, including literary works.

One of the literary works that raises the issue of ecology is *The Wild Robot Protects*. The novel tells the story of Roz (a robot identified as female) and the animals of their island's perfect, wild, natural, and harmonious life. However, one day, an injured seal washed up on the beach and warned of dangerous murky water flowing towards the island, and before long, the animals were forced onto the

mainland to fight over dwindling resources. Roz calms and organizes the animals, but a toxic wave is taking its toll on the island. When the robot discovers her new body is waterproof, she takes to the waves and sets off across the ocean, determined to stop the poison wave.

During her underwater journey, Roz encounters impressive geological formations and incredible creatures, and she sees the devastation caused by toxic waters. The creatures she encounters lead her to a mysterious character known as the Ancient Shark, who explains that the poisonous tide is caused by a massive station floating on the waves, operated by humans and robots. The Ancient Shark is ready to attack with an army of sea creatures to stop it. However, Roz hopes to find a peaceful solution. This novel strongly reflects the relationship between humans and nature that cannot be separated from each other. Therefore, the researcher is interested in analyzing this novel further regarding the relationship between humans and nature in Peter Brown's *The Wild Robot Protects* through Garrard's (2004) ecocritical theory.

As Garrard (2004) mentions, ecocriticism is a way for humans to show how they feel, think, and react to the environment around them by defining, exploring, and even solving ecological problems. This is in the story in the book *The Wild Robot Protects* by Peter Brown, which outlines that the main character, Roz, is very concerned about environmental damage because she is aware of the effects of water pollution, such as fighting over dwindling resources and the destruction of ecosystems. Therefore, the ecocritical approach is suitable for analyzing this novel and will help conduct this research.

Many studies on ecocriticism have been conducted by previous researchers, including research conducted by Santoso et al. (2020), which analyzed the relationship between humans and the natural environment in the novel *Luka Perempuan Asap* by Nafi'ah Al-Ma'rab. This research shows a disconnection between people's knowledge of environmental damage and their efforts to stop it. Similarly, studies by Sardari (2020), Hadi (2022), and Abolfotoh (2023) emphasize the interrelationship between humans and the environment, underscore the need to preserve nature for the welfare and security of humanity and explain how humans and the environment affect each other.

Further contributions to the field were made by Andika (2023), Bagus et al. (2021), Mishra (2016), and Ray (2019). In their research, they used ecocritical theory, which emphasizes the importance of ecological literacy, environmental awareness, the relationship between humans and nature, and environmental damage in literary works so that these literary works can increase ecological awareness among readers.

In line with that, researchers who have explored similar themes from various angles include Farida et al. (2019), who explain that Richmond's trilogy of novels delves into the relationship between humans and the environment, emphasizing the Gaia hypothesis and the imperative for ecological preservation. The other researcher, Ledezma et al. (2021), explain the potential for environmental contamination and its impact on the ecosystem, which allegedly resulted from analyzing the heavy metal content in snake fruit.

Based on previous studies, this research has both similarities and differences. The similarities lie in discussing the same topic and theory. Specifically, this research addresses the ecological apocalypse, its impact, and the main character's efforts to stop it using Garrard's (2004) ecocriticism theory, which is consistent with the theoretical framework employed in previous studies. However, the differences are notable in the object of the study and the aim of the research. Unlike previous research, which may have analyzed different literary works or topics, this study focuses on Peter Brown's novel *The Wild Robot Protects*. Additionally, while prior research may have had different objectives, this study aims to describe the ecological apocalypse, its impact depicted in the novel and the main character's efforts to stop this issue. Thus, this research introduces a new perspective by examining a unique literary work and its specific portrayal of environmental challenges. Therefore, the researcher in this study aims to describe the ecological apocalypse in the novel *The Wild Robot Protects* by Peter Brown using Garrard's (2004) ecocriticism theory. In addition, the researcher also seeks to describe the main character's efforts to stop the impact of the apocalypse. By comprehending the result of this research, the researcher hopes it may help us raise awareness regarding the importance of preserving natural life in the present day.

B. Problems of the Study

Based on the aforementioned background, this study formulates the following questions:

1. What are the forms of ecological apocalypse in Peter Brown's *The Wild Robot Protects*?
2. What are the impacts of apocalypse in Peter Brown's *The Wild Robot Protects*?
3. How does the main character stop the impacts of the apocalypse in Peter Brown's *The Wild Robot Protects*?

C. Significance of the Study

The results of this study are expected to be helpful for the researcher and other researchers interested in literary studies that raise issues of nature, especially apocalypse. The results aim to contribute the researcher's thoughts to a broad audience of thinkers and academics and encourage awareness and action in protecting the environment.

D. Scope and Limitation

This research focuses on exploring the novel *The Wild Robot Protects* by Peter Brown by discussing the forms, their impacts of the apocalypse and the main character's efforts to stop the impacts of the apocalypse. This research is assisted by Greg Garrard's and Keraf's theories that emphasizes the importance of understanding the relationship between humans and nature through literary works to encourage awareness and action in preserving and protecting the environment.

E. Definition of Key Terms

1. Ecocriticism

Ecocriticism is the study of the relationships that have occurred throughout human cultural history between humans and other beings. It also entails an in-depth and critical analysis of the concept of "human" (Garrard, 2004). According to him, ecocriticism is the study of the relationship between humans and nature, human history, and culture as it relates to the critical analysis of humans and their environment. In other words, it can be said that ecocriticism is the study of the relationship between humans and nature manifested in human ethics or culture toward nature.

2. Apocalypse

Apocalypse is a narrative that often involves themes of destruction and hope for renewal. This theme has existed in various religious and secular traditions for thousands of years. In an environmental context, apocalypses are often associated with ecological disasters caused by human activities, such as environmental degradation that can lead to natural disasters (Garrard, 2004).

3. Pollution

Pollution is an environmental problem characterized by the excessive presence of an entity in an inappropriate location, thus causing environmental damage. Garrard also observed that pollution can be solids, gases, liquids, or lost

energy, disrupting the balance of nature and the ecological environment (Garrard, 2004).

4. Environmental Ethics

The moral relationship between humans and nature is called environmental ethics. It contradicts the conventional anthropocentric perspective, which considers humans to have moral superiority and the right to utilize nature for their personal benefit (Keraf, 2010).

CHAPTER II

REVIEW OF RELATED LITERATURE

This chapter presents a literature review as the basis for theory and analysis. It also discusses ecocriticism as literary criticism, exploitation, and water pollution.

A. Ecocriticism as Literary Criticism

The term 'ecocriticism' is a semiotic concept. 'Eco' stands for ecology, a field that deals with the interactions between living organisms in their natural environment and their relationship with that environment. Similarly, ecocriticism explores the correlation between literature and the environment, exploring how human interaction with the physical environment is reflected in literary works. This interdisciplinary pursuit is unusual because it combines elements of the natural sciences with humanistic disciplines (Tošić, 2006).

This unique combination of the physical and metaphysical realms is evident in the various terminologies used in ecology and ecocriticism, which share the common goal of preserving habitats essential to human survival. By blending two different disciplines, ecology and literary analysis, ecocriticism seeks to address the well-being of the earth, which has been compromised by human actions. It is essential to highlight that ecocriticism has not yet developed into an integrated approach. It is more of a field consisting of various projects and overlapping disciplines, and this overlap can be seen in some of the terms they use.

As a branch of literary criticism, ecocriticism is recognized globally as an interdisciplinary study of literature and the environment. It includes the study of

subjects such as literature, science, psychology, sociology, and anthropology, as well as attempts to study human attitudes towards nature. Terms like “environmental literary criticism,” “eco ethics,” and “green culture” are often associated with this relatively new approach to literary criticism (Sahu, 2014).

Literary works influenced by ecocriticism demonstrate that literature is a powerful medium capable of conveying crucial messages about environmental awareness and criticizing the current state of the environment. This growing phenomenon in environmental theory and criticism represents an increased awareness of environmental issues (Makwana, 2016). Ecocriticism has evolved as a set of “earth-centered” approaches to cultural criticism that mobilize and reframe theories from various disciplines, such as biology, philosophy, ecology, and sociology (Marland, 2013).

B. Apocalypse

According to Garrard (2004), "apocalypse" is a term used to describe abnormal natural and environmental conditions. Such conditions are characterized by climate change, destruction, degradation of ecosystems, extinction, and an increase in natural disasters caused by human actions. Garrard (2004) stated that there is a general awareness that ecological apocalypse can occur in three forms: climate change, depletion of natural resources, and natural imbalance. Garrard also stated that the environment would remain even if civilization were not built.

1. Climate change

According to Garrard (2004), climate change is a change in average weather patterns in a region or the entire Earth over a significant period, including temperature, precipitation, and wind patterns. Climate change is mainly caused by human activities, especially the emission of greenhouse gases (such as carbon dioxide) into the atmosphere, which traps heat and contributes to the warming of the Earth.

2. Depletion of natural resources

According to Garrard (2004) Another form of environmental apocalypse is the depletion of natural resources which is often the result of human activities, such as over consumption and over exploitation of natural resources. Garrard (2004) stated that the depletion of natural resources is caused by human activities that exceed the Earth's ability to regenerate and replenish these resources. Garrard argues that natural resources such as freshwater, forests, and fossil fuels are minimal and cannot be maintained indefinitely. Garrard cited several factors that led to the depletion of natural resources, such as over consumption, over fishing, deforestation, and the burning of fossil fuels.

These activities lead to biodiversity loss, habitat destruction, climate change, and other environmental problems. All of these problems can lead to social, economic, and political instability. Garrard supports sustainable practices that prioritize conservation and the wise use of natural resources. Reducing waste, encouraging renewable energy, and adopting a circular economy model that prioritizes the reuse and recycling of goods are some examples of these efforts. In

addition, he emphasized the importance of international cooperation and coordination to address resource depletion around the world.

3. Natural imbalance

Natural imbalance is when the natural balance in an ecosystem is disrupted by human action (Garrard, 2004). Human actions such as deforestation, over fishing, burning fossil fuels, and mining activities, as also explained by (Baker et al., 2020) contribute to the imbalance of natural systems that support life on Earth, and these imbalances cause habitat destruction, climate change, biodiversity loss, and other negative impacts (Garrard, 2004).

Garrard argues that addressing nature's imbalances requires a holistic approach that considers different aspects of nature. Such an approach involves not only reducing humans' impact on the environment but also restoring damaged ecosystems and encouraging sustainable practices that support nature's balance. Basically, Garrard's perspective on natural imbalances underscores the importance of acknowledging and being aware of natural imbalances and how to address them.

Garrard emphasized that natural balance is a dynamic process that involves the interaction between living organisms and their environment. On the contrary, it is not a fixed idea. Nature and society will be significantly affected if this balance is disturbed. For example, the decline in natural resources can lead to food and water shortages, while the loss of biodiversity can harm human health and well-being.

C. Pollution

According to Garrard (2004), the idea of pollution is an ecological problem because pollution is a logical case for something happening in excess and in an inappropriate location. Historically, the trope of 'pollution' has been implicated in both the destruction and salvation of the environment; from an ecocritical perspective, pollution reflects the ambivalent role of science, both as a contributor to environmental damage and as a critic analyzing its negative impacts. The most alarming human environmental assaults are air, soil, water, and sea pollution caused by hazardous and even deadly substances (Garrard, 2004). Although Garrard's statement covers the big picture of the problem, further research by environmental scientists provides a more in-depth explanation of the specific forms of such pollution, which include air, soil, water, and ocean pollution.

1. Air Pollution

Air pollution is a phenomenon of environmental pollution by particles (solid or liquid) and gases, which can cause chronic health effects, such as long-term respiratory diseases and cardiovascular disorders, as well as acute, such as sudden asthma attacks and eye irritation (Stapleton, 2004), this is reinforced by Garrard's (2004) statement that he issues alarms for types of pollution that are invisible to the senses. This can cause to long distances, even to the rest of the world. It can accumulate in the body's tissues over time e time and cause chronic and acute poisoning. In addition to being a direct cause of shared health problems, air pollution is also one of the leading causes of death and disease worldwide, both in developed and developing countries (Harrison, 2016).

2. Soil Pollution

Soil pollution is a condition in which the soil is contaminated by harmful substances or pollutants, which changes the composition and quality of the soil. This pollution can be caused by various human activities, such as industrial waste disposal, the use of pesticides and herbicides, and leakage from landfills. The impact of soil pollution can directly affect human health when potentially toxic substances move through the food chain or contaminate groundwater used as a source of drinking water (Harrison, 2016).

3. Water Pollution

Water pollution is defined by the quantity of pollutants and the volume of water available to dilute them. While some pollutants may have minimal impact on large bodies of water like oceans, they will significantly impact rivers or lakes with limited water volumes (Woodford, 2023). Once freshwater is contaminated to a certain level, it becomes polluted, and restoring its quality is both complex and costly (Walker et al., 2019).

Many cases of water pollution come from point sources such as pollution that comes from easily identifiable locations such as pipelines or factory chimneys, as well as industrial waste disposal. However, pollution from non-point sources, which come from a variety of scattered locations such as rainwater runoff that carries chemicals from roads, parking lots, or farmland, is more difficult to trace and address. Pollution from non-point sources, such as agricultural and mining activities, is a more significant challenge (Hill, 2004). In addition, as highlighted in

Silent Spring, pesticides pose a serious threat to wildlife and human health (Garrard, 2004).

4. Sea Pollution

According to Baker et al.(2020), sea Pollution or marine pollution is when harmful substances such as chemical garbage, industrial waste, and agricultural runoff enter the ocean. This pollution can come from a variety of sources. The main types of marine pollution include:

- a. Chemical contamination: Runoff from fertilizers and pesticides causes nutrient contamination, leading to harmful algae growth. Additionally, dust from hydrocarbon exploitation and terrestrial minerals, as well as the impact of deep-sea mining and the resulting large sediment plumes.
- b. Plastic Pollution: Items such as plastic bags and bottles take hundreds of years to decompose, threatening marine life.
- c. Oil Spills: Accidental release of oil into the ocean can damage marine ecosystems.
- d. Noise Pollution: Underwater noise from ships and industrial activities can interfere with marine life.

In line with that, Garrard (2004), stated that substances or groups of substances that are excessive in the wrong place will cause ecological problems.

D. Environmental Ethics

The moral relationship between humans and nature is called environmental ethics. It contradicts the conventional anthropocentric perspective, which considers humans to have moral superiority and the right to utilize nature for their personal benefit (Keraf, 2010).

The principle of environmental ethics describes human behaviour that does not interfere with preserving nature. The form of environmental ethics principles in literary works will provide an understanding that the use of nature still pays attention to environmental sustainability for future life. Keraf (2010) argues that environmental ethics is a science that discusses the norms and moral rules that govern human behaviour in dealing with nature. Keraf argues that there are nine principles of environmental ethics, including respect for nature, the principle of responsibility, cosmic solidarity, the principle of compassion and care for nature, the principle of "No Harm," the principle of living simply and in harmony with nature, the principle of justice, the principle of democracy, and the principle of moral integrity (Keraf, 2010).

CHAPTER III

RESEARCH METHOD

In this chapter, the researcher discusses the methods and the theories used in this research. This chapter consists of research design, data sources, data collection, and data analysis.

A. Research Design

This study uses a literary criticism approach because it aims to analyze a specific literary work according to the field of literary studies (Peck & Coyle, 1988). To conduct this literary criticism, an ecocritical approach is used to achieve the purpose of this study. This study aims to explain the forms of ecological apocalyptic, their impact, and explain how the main character stops the impact of the apocalypse reflected in the novel *The Wild Robot Protects* by Peter Brown. Therefore, the researcher uses apocalyptic by Greg Garrard's (2004) ecocriticism.

B. Data Source

The data source for this research is Peter Brown's novel *The Wild Robot Protects*, published by Little in 2023. The novel has eighty chapters and 209 pages. In addition, the data taken from the novel are words, sentences, and paragraphs that are in accordance with the research topic. The researcher focuses on the data source obtained from the novel *The Wild Robot Protects* and analyses it using literary criticism and Greg Garrard's theory.

C. Data Collection

Data collection in this study uses a note-taking technique by quoting the text of the novel entitled *The Wild Robot Protects*. The method used in collecting data for this research is to start by reading the whole novel from beginning to end to identify it in general. After that, underline the data related to ecology, especially dealing with the apocalypse and its impacts. Finally, the collected data was categorized based on the forms of apocalypse, their impacts, and how the main character stops the problems.

D. Data Analysis

In this stage, the researcher began the analysis process, following several key steps. The first step involves identifying the form of apocalypse depicted in the novel, examining their effect, and describing how the main character stops these problems, using data related to the issues and supporting evidence from the text. The second step is to classify and explain the data according to various aspects of the novel or related research themes. The last step is to draw conclusions based on the research problems, analyze the findings, and provide suggestions in the context of literary works.

CHAPTER IV

FINDING AND DISCUSSION

This chapter presents the findings and discussion of the study, it includes the forms of apocalypse, its impact, and how the main character to stop the problems as depicted in Peter Brown's *The Wild Robot Protects*.

A. The forms of apocalypse in Peter Brown's *The Wild Robot Protects*

In this section, the researcher wants to discuss the form of apocalypse that is presented in Peter Brown's novel *The Wild Robot Protects* using Greg Garrad's "Ecocriticism" approach. *The Wild Robot Protects* discusses metal mining exploitation activities that occur at sea and cause extensive environmental damage.

1. Depletion of Natural Resources

According to Garrard (2004), the depletion of natural resources results from human activity that exceeds the earth's ability to regenerate and replenish these resources. Human activities such as over fishing, deforestation, and mining cause depletion of natural resources and degradation of ecosystems, mainly marine ecosystems. As discovered in the novel *The Wild Robot Protects*, metal mining in the sea affects marine ecosystems. The following researcher explains in more detail below:

Datum 1

"On the other side of this ocean, a robot is demolishing an underwater mountain. The robot doesn't look like you, Roz. He looks more like a giant crab. He tears rocks from the mountain, creating huge dust clouds that stream away on the currents. Those dust clouds are the poison tide. Other robots collect the

rocks and carry them to a structure that floats on the surface. We don't know what happens in the floating structure, but we know there are humans aboard."
(page 108)

The datum above describes a situation where natural exploitation activities carried out by robots on the seabed cause severe environmental damage. The robot, which is described as looking like a giant crab, is destroying an underwater mountain by tearing apart rocks, which then creates a massive cloud of dust. This dust cloud looks like a "toxic wave," indicating that the mining activity is destroying natural resources, depleting natural resources, and polluting the surrounding marine environment.

Additionally, the collection of rocks by other robots, which were then taken to floating structures thought to be occupied by humans, suggests human involvement in this exploitation. However, the impact is not fully known to them. According to Garrard (2004), the depletion of natural resources results from human activity that exceeds the earth's ability to regenerate and replenish these resources. This reflects humans' ignorance or indifference to the damage they cause through the technology they use, and this situation illustrates how human activities can degrade the quality of the environment and damage the welfare of living creatures that depend on it.

Another datum shows the depletion of natural resources in the story where Roz speaks to Akiko.

Datum 2

Nature creates many harmful substances," said Roz. "There are poisonous plants and venomous animals and acidic hot springs. Nature also creates toxic minerals. When left

alone, those minerals are usually harmless, but humans often dig them up, as you are doing here. (p132)

The datum illustrates Roz's view that humans often explore and utilize dangerous natural resources if not managed wisely to avoid the depletion of natural resources caused by human activities. Roz notes that nature naturally produces various dangerous substances, such as poisonous plants, venomous animals, acidic hot springs, and poisonous minerals. In their natural state, these elements usually do not pose a significant danger because they are in their natural place and are not disturbed. This illustrates how the ecosystem has reached a natural balance where harmful elements remain isolated and do not pose a risk to the broader ecosystem.

However, Roz also highlighted the negative impacts that arise when humans are involved in environmental exploitation, such as mining for toxic minerals. By “digging” for these minerals, humans often remove these harmful substances from their natural habitat, which can lead to environmental contamination and health risks. In the context of ecocriticism, this reflects a critical view of irresponsible human behaviour in managing natural resources, which poses a threat to the environment. Humans often ignore the ecological consequences and destroy the existing natural balance.

This datum aligns with Garrard's (2004) theory that the apocalypse is an abnormal natural and environmental condition characterized by climate change, destruction, ecosystem decline, extinction, and increased natural disasters caused by human activities. These excavation and exploitation activities deplete natural resources and have sustainable negative impacts. Thus, Roz invites us to consider

the long-term impacts of human intervention in nature and the importance of respecting existing boundaries to maintain ecosystem balance.

Further analysis shows that depletes natural resources, namely excessively minimal metal mineral resources in the sea.

Datum 3

“Roz, you should really be thanking us,” said George. “Without mines like this, you wouldn’t even exist.” “I do not understand, said roz.” “Do you know what we’re mining?” said Akiko. “No, I do not.” George smirked. Akiko frowned. “We’re mining rare metallic minerals,” said Akiko, “minerals needed for making robots like you.” (p133-134)

The datum above describes the extraction of rare mineral resources from the seabed used to develop technologies such as the Roz robot. George and Akiko explain that Roz's existence depends on extracting these minerals, underscoring the heavy reliance on limited natural resources and scarce minerals, which are over exploited to meet the demands of contemporary technology. The seabed mining presented in this discussion often results in severe environmental consequences, including the destruction of marine ecosystems, contamination, depletion of natural resources, and disruption of ecosystems.

These activities not only accelerate the depletion of irreplaceable mineral resources but also pose ongoing dangers to the sustainability of marine ecosystems. The anthropocentric attitude depicted in this discourse, which prioritizes technological progress over environmental sustainability, shows indifference to exploitation that leads to the depletion of natural resources. Therefore, this discourse emphasizes recognizing the adverse impacts of excessive mining on the environment and future resource accessibility.

According to Garrard (2004), an apocalypse is an abnormal natural and environmental condition characterized by climate change, destruction, ecosystem decline, extinction, and an increase in natural disasters caused by human activities.

Later analysis illustrates how a robot is tasked with continuing to mine metallic mineral resources and causing depletion of natural resources and pollution, with ongoing damaging impacts on marine ecosystems.

Datum 4

“I’m sorry to tell you this, but the poison tide is still flowing because the mining robot is still working, and he’ll keep working until his task is complete. He’s a giant machine designed to demolish deep-sea mountains. (Page 159)

The datum above illustrates the ongoing impact of deep-sea mining activities. Mining robots are designed to continue mining until they destroy underwater mountains and produce continuous pollution. The toxic waves resulting from these activities flow through the oceans and pollute the environment in their path.

This toxic wave not only pollutes the sea but also impacts entire marine ecosystems, destroying habitats and threatening the lives of marine creatures that depend on these ecosystems. According to Garrard (2004), apocalypse refers to an abnormal natural and environmental condition characterized by climate change, destruction, ecosystem decline, extinction, and increased natural disasters caused by human activities. The datum above underlines that deep sea mining, which destroys underwater mountains by robots, reflects how the results of human activities can create drastic and destructive changes in ecosystems.

The next datum depicts the Crusher's robotic movements in mining that led to the depletion of natural resources

Datum 5

There was a rhythm to Crusher's movements. He surged forward and tore at the rocky ground with his grinding tool; then he scooped the pieces into huge storage bins; then he surged forward again. Ordinarily, the HYDRO robots would visit each day, and haul the broken rocks up to the station. That routine had gone on for months, and the underwater mountain of minerals had slowly grown smaller. (page 165)

The datum provides a clear picture of the deep-sea mining process carried out by the “Crusher” robot. The robot's movements are very systematic and regular and have a rhythm. The Crusher robot uses a “grinding tool” to tear up rocky soil. Then, it moves the rock pieces to a large storage bin, demonstrating the mechanically intensive process of extracting material from the seabed.

Coupled with the use of HYDRO robots to transport rock fragments to the Station daily, this process is a continuous and routine operation. Unwittingly, the long-term impacts of deep-sea mining began to be shown, where “mineral deposits beneath the water are slowly shrinking.” The decrease in the amount of remaining minerals shows the effects of mining on natural resources, resulting in a reduction in the minerals available on the seabed.

This is in line with Garrard's (2004) view. The datum text above shows how marine mining contributes to the depletion of natural resources through intensive and sustainable activities. Regular and continuous mining produces severe environmental impacts and causes ecological damage.

2. Natural Imbalance

Natural imbalances indicate an inherent imbalance disorder in ecosystems triggered by anthropogenic activity (Garrard, 2004). Garrard argues that human efforts, including deforestation, over exploitation of natural resources, and the burning of fossil fuels, have triggered disruptions to the natural systems that support life on our planet. Such disturbances culminate in biodiversity erosion, habitat destruction, climate change, and a myriad of additional environmental challenges. Garrard emphasizes that the balance of nature is not a fixed idea but rather a dynamic interaction between biotic entities and the surrounding environment.

As found in the novel *The Wild Robot Protects*, this analysis reveals that the resulting pollution not only damages the marine environment but also spreads to the land, resulting in severe environmental degradation and forcing animals to leave their natural habitats.

Datum 6

Crashing waves sent poison sea spray into the air. Wind then carried the spray inland, where it settled on grasses and flowers and trees, turning them gray and brittle. Land animals who lived near the ocean had no choice but to retreat far into the island. (page 21)

The datum above describes the widespread and destructive impact of water pollution that occurs in the sea, where toxins carried by the waves not only pollute the waters but also reach land. The crashing waves that channel toxic spray into the air show how this pollution is not only limited to water, but can also contaminate the atmosphere and surrounding land. Winds carrying the toxic spray inland caused damage to vegetation, leaving grass, flowers, and trees “gray and brittle,” a sign of

extensive damage from exposure to the toxic chemicals. Likewise, animals that live near the sea are affected, forced to retreat deep into the island to avoid the polluted environment.

According to Garrard (2004), exploitation efforts carried out by humans have triggered disruptions in the natural systems that support life on our planet. This is in line with what happens in this novel, where the impact of exploitation in this novel forces the animals to look for new homes.

Furthermore, this analysis illustrates the negative impact of the exploitation of metal mineral resources in the sea, where the resulting pollution spreads far from the source, threatening life in various ecosystems and destroying surrounding marine life.

Datum 7

“There is toxic runoff flowing from your deep-sea mining site,” explained Roz. The animals call it the poison tide. Ocean currents are carrying the poison tide far to the south, and it is damaging every living thing in its path. It has surrounded my island, and now my home is dying. I have come all this way to stop the poison tide. (Page 132)

The datum illustrates the profound ecological consequences of deep-sea mining as explained by Roz's explanation of “toxin waves.” These destructive releases originating from deep-sea mining give rise to contamination that extends beyond the mining site, penetrating vast expanses via ocean currents. The toxin spread widely to southern regions, detrimentally affecting all organisms in its path and significantly disrupting the balance of marine ecosystems.

This incident exemplifies how harmful byproducts from industrial operations can pollute the environment on a large scale, causing widespread damage to marine biodiversity. This discourse emphasizes the need to address pollution quickly and effectively to protect marine ecosystems from further degradation. By highlighting the detrimental effects of toxic waves, the text underscores the importance of awareness regarding environmental issues and the need for concerted efforts to reduce the adverse consequences of human endeavour.

According to Garrard (2004), human exploitation efforts have triggered disturbances in natural systems, such as habitat destruction and erosion of biodiversity. This is in line with what happens in this novel, where the impact of exploitation forces animals to look for new homes and destroys all living creatures in its path.

Furthermore, this datum describes the destruction of ecosystems caused by deep-sea mining, which triggers dramatic changes in animal life patterns. This causes changes in the behaviour of animals forced to adapt to an increasingly worsening situation.

Datum 8

The Great Meadow was overrun by swarms of mice and, snakes and frogs. Sea otters invaded streams and ponds, gobbling up freshwater fish and driving out many of the longtime residents. As fish became harder to find, bears were forced to eat nuts and berries, and that forced the deer and the hares and the squirrels to find other sources of food. (Page 21)

The datum above depicts the changes in the ecosystem and the resulting behaviour of animals that are forced to adapt to a worsening situation due to human activities; in this datum, the Great Meadow, overrun by rats, snakes and frogs,

illustrates how certain species begin to dominate new territories after their previous habitats are destroyed by pollution. Sea otters are invading rivers and ponds, devouring freshwater fish and driving longtime residents from their habitats. While fish are becoming harder to find due to water pollution, predators such as bears have to find other unusual food sources, such as nuts and berries, while other species, such as deer, rabbits and squirrels, have to adapt and find new food sources. This shows the forced displacement of species due to depletion of natural resources.

This datum illustrates the widespread impact of over exploitation of metallic minerals that is not only limited to environmental damage but also triggers the loss of biodiversity and changes the ecosystem as a whole. This view is in line with the concept of ecocriticism, which emphasizes how human activities destroy the balance of nature and force living things to adjust to an ever-changing environment.

Over-exploitation by humans has led to the disruption of natural systems, such as the destruction of habitats and the erosion of biodiversity (Garrard, 2004). This is in line with what happens in the novel, where the impact of exploitation in the novel disrupts the balance of nature and breaks the food chain, animals are forced to eat things that are not their natural food as described in the novel “fish are increasingly difficult to find, bears are forced to eat nuts and berries, and this forces deer, rabbits and squirrels to look for other food sources”.

Another datum illustrates the impact of marine pollution caused by human activities that cause ecosystem shifts and scarcity of food resources for marine life.

Datum 9

“I’m angry because so many animals are heading south. They’re afraid of the poison tide. It’s getting harder to find food, and I was just about to catch a mouthful of squid, but I ended up catching you.” (page 72)

The datum above shows the impact produced by toxins that pollute the sea, forcing marine animals to move to safer places. Furthermore, this has unknowingly disrupted the food chain, causing food scarcity for species that depend on the ecosystem.

The animal migrations mentioned in the datum above reflect how pollution can force living creatures to leave their natural habitats to survive. When pollution contaminates their habitat and food sources, these animals are forced to look for other, safer places, and without realizing it, this also threatens the sustainability of their population as seen from the large migration of animals to the South to escape toxins.

Natural imbalance indicates a disturbance of the balance inherent in an ecosystem triggered by anthropogenic activities (Garrard, 2004). Finding squid is difficult because other animals are afraid of the toxic waves and go to safer waters. Thus, mining exploitation in the sea has a negative impact and disrupts the natural balance, as Garrard said.

The subsequent analysis further emphasizes how pollution from human activities causes the destruction of the food chain, making it difficult for polar bears to survive.

Datum 10

"I'm hungry," growled the bear. "I'm always hungry. I can't remember the last time I tasted meat. I'm lucky to find eggs. Mostly I eat grass. That's no way for a bear to live! And then there's the poison tide. It hasn't spread here yet, but the fear of it has spread everywhere. The birds and the fish and the seals are leaving. The walruses will be next. Polar bears have always hunted here. But it might be time for me to move on." (page 100)

The datum above illustrates that pollution resulting from mining activities and marine exploitation has disrupted the balance of the ecosystem on a large scale. In this text, the toxic wave that spreads to the Arctic region not only pollutes the ocean but also destroys the food chain, which is the source of life for polar bears, who are starting to leave the region due to increasingly widespread pollution. As a result, polar bears experience starvation and are forced to eat foods incompatible with their natural diet, such as eggs and grass.

Garrard (2004) argues that pollution is one of the most dangerous forms of human attack on the environment, and its impact can destroy habitats and the food chain within them. This datum reflects how pollution has forced top species such as polar bears to lose their food sources. This upsets the balance of the ecosystem and causes suffering for polar bears, who cannot find adequate food.

The toxic wave threatens individual survival and changes the dynamics of the entire ecosystem. The animals that polar bears usually prey on have been affected by the pollution, either through direct exposure or because their habitats have been damaged. This destruction of the food chain means that every creature in the Arctic ecosystem must adapt or face death.

Furthermore, this datum describes how pollution from human activities is once again disrupting the balance of nature, especially in marine ecosystems in the northern region. Herds of animals are starting to be forced to leave their habitat.

Datum 11

Our robot was swimming through the northern ocean, under a sky filled with stars. Fear of the poison tide had driven away countless ocean animals. There were fewer fish, fewer squid, fewer seabirds. Some of the larger animals remained, for now. (Page 102)

The datum shows how human actions, through pollution and exploitation of marine resources, have created widespread fear and damage in marine ecosystems. With the decreasing population of fish, squid, and seabirds, the balance of the ecosystem is disrupted, and more significant marine life will also be threatened if this situation continues.

A decline in fish and squid populations directly impacts larger predator species. When species at the bottom of the food chain decrease, predators at the top will also experience starvation and possibly population decline. Fears of toxic waves driving the migration of marine species highlight the cascading impacts of pollution on entire marine ecosystems.

Marine pollution due to human exploitation, such as mining and dumping toxic waste, creates a severe threat to marine life. In the text above, toxic waves caused by human activities have caused a drastic decline in the populations of various marine species, from fish to sea bears. These animals, an essential part of the marine food chain, are starting to disappear due to pollution and feel threatened by further impacts from toxic waves.

This is in line with the view of Garrard (2004), who states that pollution is the most striking form of environmental destruction caused by humans, with impacts that damage the ecosystem as a whole. In this text, pollution results in the breakdown of food chains, loss of habitat, and population declines, which have a direct impact on larger predatory species. The fear of toxic waves driving the migration of marine species underscores the chain effects of pollution on entire marine ecosystems.

The datum analysis below highlights the hidden impacts of pollution on marine ecosystems, which humans often underestimate, causing widespread and unpredictable damage.

Datum 12

“While you wait to finish the job,” said Roz, “a vast number of habitats are being wiped out.” “That can’t be right,” said Akiko. “By our calculations, the runoff shouldn’t be traveling very far.” “And the seafloor is barren around here,” added George. “So there’s nothing for the runoff to harm.” “Your calculations are wrong,” said Roz. “The seafloor is not barren, and the poison tide is traveling across this entire ocean and far into the next.” (page 133)

The datum above illustrates that marine habitats have been destroyed on a large scale during mining activities. Akiko and George, who presumably represent parties involved in the mining operation, dispute Roz's statements, arguing that the pollution runoff should not spread too far based on their technical calculations. George added that the seabed around the mining area is considered barren, so according to them, there is no significant environmental risk from pollution runoff. However, Roz explains that the seabed is not barren, and the pollution produced by mining activities spreads far across the ocean, damaging a broader marine ecosystem than Akiko and George anticipated.

The datum illustrates the conflict between Roz, Akiko, and George's views, which rely on technical calculations that underestimate the impact of pollutant runoff from their activities. However, Roz showed that their view was wrong. Toxic waves from pollution runoff have spread far across the ocean, destroying the habitats in their path even more widely than they expected.

Garrard (2004) argues that pollution is often seen as a local and manageable problem, but its impact is much more significant and complex than expected. Pollution, as in this datum, can spread far beyond its source and destroy ecosystems humans consider safe. This explains that pollution, especially from exploiting natural resources, often has a much broader and more damaging impact than humans expect, destroying fragile ecosystems and affecting the balance of nature.

Another datum illustrates that the impact of this exploitation disrupted the balance of the ecosystem and caused a resource crisis that divided the animals on Great Meadow Island.

Datum 13

Brightbill spoke about the island. Thanks to the supply of fresh water, most animals were surviving, but food and shelter were scarce. Several more geese had left the flock. Neighbors were lashing out at each other. The island community had splintered apart. (page 148)

The datum above describes the critical situation on the island, where most animals can still survive because of the availability of clean water. However, they feel a scarcity of food and shelter. This results in a social crisis among the animals, where they start to leave their herd, other animals start to attack each other, and the

island's inhabitants, which previously might have been harmonious, are now experiencing division.

The datum above reflects how pollution from mining exploitation impacts the physical health of living creatures and damages the social and ecological balance. When the habitat is degraded, animals are forced to fight over the remaining resources, and previously intact communities become fragmented, as stated in the datum above. This shows how the impact of environmental pollution and exploitation can spread, destroying the social order and ecosystem on the island.

In the novel, houses and food are scarce, and human activities are destroying the environment, causing even other species to leave their old homes. According to Garrard (2004), the apocalypse refers to abnormal natural and environmental conditions characterized by climate change, destruction, ecosystem decline, extinction, and increased natural disasters caused by human activities.

Later analysis depicts that as a family of swans peering into the waters, they see the painful reality that all marine life has been lost due to these toxic waves.

Datum 14

*But as the family of geese peered into the shallows, they were reminded of the painful truth. All the sea life was missing. What had once been a healthy reef, bustling with activity, was now nothing more than water and rocks and sand.
(page 186)*

The datum above highlights the severe impacts that human activities have on the marine environment, especially the destruction of natural habitats. The swan family, which previously may have depended on a healthy marine ecosystem for their livelihood, is now facing the harsh reality that all marine life has been lost.

Once centres of life and activity, coral reefs have become empty water, rocks, and sand stretches.

Coral reefs have been destroyed, which should be home to various marine species and balance the ecosystem. This loss not only means a loss of biodiversity but also disrupts the balance of nature and, over time, can have a long-term impact on environmental sustainability. The destruction of coral reefs in this text highlights how fragile marine ecosystems are to environmental changes triggered by human activities.

This aligns with Garrard's (2004) view that the apocalypse is an abnormal state of nature and environment characterized by climate change, destruction, ecosystem degradation, extinction, and increased natural disasters caused by human activities. On the other hand, the datum above emphasizes the importance of protecting natural habitats and emphasizing sustainable exploitation practices to maintain the balance of nature and the sustainability of life on earth.

B. The impacts of apocalypse in Peter Brown's *The Wild Robot Protects*

1. Environmental Damage

Historically, the trope of 'pollution' has been implicated in both the destruction and salvation of the environment; from an ecocritical perspective, it reflects the ambivalent role of science as both a generator of environmental hazards and a critical analyst of environmental hazards. The most alarming human environmental assaults are air, soil, river, and sea pollution caused by hazardous and even deadly substances (Garrard, 2004).

Pollution is now a commonly used term, and our ears are used to hearing it. Water pollution is one form that refers to water contamination. Physical, biological, or chemical changes to the water in rivers, lakes, or oceans can be referred to as pollution. This happens when dangerous substances such as waste, chemicals, plastic, and oil enter the water and make it difficult for plants, animals, and humans to survive because the water becomes polluted. According to Garrard (2004), pollution directly results from human activities that damage the environment locally and cause widespread impacts through the spread of toxic substances. In this novel, it is explained that humans do not care about water pollution and river and ocean pollution caused by destructive human activities.

This is found in the novel *The Wild Robot Protects*, where a seal is curious about the sparkling water until it tastes poison from the water. The following researcher explain in more detail below.

Datum 15

"I was hunting in the north with my friends and family when we noticed a shimmering patch of water," said the seal. "We were curious, so we swam closer. And then we felt the poison. The shimmering water burned our mouths and our noses, and our eyes! I couldn't see, and I called out for the others, but nobody called back. The poison tide kept washing over me, and the pain was too much, so I turned and swam for my life back into clear ocean water, and I just kept swimming for days until I arrived here."(page 5)

The datum describes the trauma of a seal that was exposed to toxic pollution in the ocean where the dog was hunting with his friends and family, and they found a "sparkling piece of water" that lured the seals to come closer, but when they approached the sparkling water they immediately felt the effects of the poison

hidden in it. The poison caused burns to their mouths, noses, and eyes, indicating the presence of harmful chemicals or pollutants contaminating the water.

The water pollution described in the text shows how dangerous chemicals or pollutants pollute the ocean, which not only destroys habitats but also directly endangers the health and welfare of marine creatures. This is in line with what Garrard (2004) said that the most worrying human attack on the environment is air, land, river, and sea pollution caused by dangerous and even deadly substances.

Further analysis highlights the activity of mining robots that create toxic waves and spread with the current.

Datum 16

All that grinding of rocky minerals created great clouds of toxic dust, which streamed away on the currents. (page 165)

The datum describes how the activity of grinding rock minerals in the sea can create “large clouds of toxic dust” that spread with the currents. This dust cloud is a form of pollution from mining, which continues to flow through the ocean and spread dangerous substances into the surrounding environment.

According to Garrard (2004), this pollution directly results from human activities that damage the environment locally and cause widespread impacts through the spread of toxic substances. This datum describes pollution as active and ongoing, with toxic dust spreading unabated unless the mining activity is stopped.

The next datum depicts the robot Crusher’s movement in mining, which causes the depletion of natural resources.

Another analysis describes deep sea mining activities carried out by a robot and produces toxic waves.

Datum 17

Roz heard a grinding noise coming from far below. The noise grew louder as she descended. Dust clouds appeared, and suddenly the poison tide was everywhere. She swam on through the clouds as the grinding noise grew louder still. (page 164)

The datum above describes a situation where underwater mining activities cause significant and dangerous pollution. The grinding sound that was heard from afar became louder when Roz came down, indicating that a mining machine was operating. This sound is a clear sign of the mining process destroying underwater materials.

The appearance of “dust clouds” and “poison waves” spreading around Roz indicates the direct impact of mining. The resulting dust and widespread pollution show that mining activities not only affect local areas but also create widespread contamination and damage marine ecosystems and the life within them. According to Garrard (2004), this pollution directly results from human activities that damage the environment locally and cause widespread impacts through the spread of toxic substances. This datum illustrates where mining activities produce widespread pollution and threaten the health of the marine ecosystem as a whole.

Furthermore, this analysis also shows how mining of natural resources in the sea causes the widespread spread of pollution, creating very dangerous toxic waves.

Datum 18

“The poison tide actually starts directly beneath us,” explained Roz. “This is a deep-sea mining operation. It is creating huge clouds of toxic dust that travel far through the ocean before rising to the surface.” (page124)

The datum above depicts the negative impacts of deep-sea mining operations on the marine environment, expressed through the character of Roz. Deep sea mining, which is carried out below the surface of the sea, causes the formation of "toxic waves" that originate from the mining activity. These toxins not only remain on the sea floor but also create “huge clouds of toxic dust” that spread far through the ocean. Over time, this toxic dust rises to the surface, polluting the entire water layer.

This datum shows the potential negative impacts on marine ecosystems caused by human activities, with a particular focus on deep sea mining. The spread of hazardous substances, such as toxic dust, exemplifies the way in which harmful chemicals and pollutants are introduced into the environment, then spread to different layers of marine ecosystems. The rise of these harmful substances to the surface of the ocean shows that the impacts of deep-sea mining extend beyond the depths of the ocean, affecting surface-dwelling organisms and potentially impacting coastal ecosystems as well. According to Garrard (2004), pollution directly results from human activities that damage the environment locally and cause widespread impacts through the spread of toxic substances.

The datum warns against the dangers of exploiting natural resources without considering the environmental consequences, emphasizing the potential for unregulated human actions to cause widespread damage and disrupt the ecological balance. Additionally, it underscores the importance of environmental awareness

and accountability in overseeing industrial operations, especially in relation to fragile ecosystems such as the deep sea.

The analysis further highlights how the mining of marine metal mineral resources not only depletes natural resources but also causes pollution that damages underwater ecosystems, which are often hidden beneath the seemingly calm surface.

Datum 19

Above the surface, the sea appeared normal. It was vast and blue and it rippled with waves. But below the surface, the sea was very unusual. It was hardly deeper than the deep end of a swimming pool. And gently shimmering dust was flowing along the currents. (page 48)

This datum depicts a striking contrast between the appearance of the sea on the surface and the actual situation below the surface. Above, everything looks normal with expansive blues and rippling waves, giving a calm and natural feel. However, images below the sea surface reveal a very unusual situation. The sea, which should be deep, is only as deep as the edge of the swimming pool, indicating significant degradation or disturbance to the ecosystem. The presence of shimmering dust gently flowing along the current enhanced the strange and unnatural atmosphere, as if it had been contaminated or undergone drastic changes.

In line with that, Garrard (2004) states that air, land, river and sea pollution caused by dangerous and even deadly substances is the most worrying attack on the environment for humans. This condition reflects the real threat to marine ecosystems shown in the datum above, where habitats that should be healthy and natural become damaged.

Another datum showing that mining activities cause pollution is found in the scene where Roz looks at the video screen in the corner of the room.

Datum 20

But that flicker went out when she noticed a video screen in the corner of the room. It was showing live video of big billowing dust clouds, streaming away from an underwater mountain, like smoke from a chimney on a windy night. Every now and then, the clouds would recede, and a giant robot briefly came into view. Roz was now looking at the source of the poison tide. All the harm done to the ocean wilderness had started right there by that deep-sea mining robot. (p119)

This datum describes deep-sea mining activities that cause ecosystem damage and provides a clear picture of how mining activities by deep-sea robots drain and destroy natural resources on a large scale. The visual use of “huge billowing clouds of dust” and “smoke from chimneys” creates a powerful image of the pollution and contamination produced by mining activities. Dust flowing from "seamounts" indicates disturbances in the seabed, caused by mining operations that stir up sediment and release harmful substances into the water. The occasional presence of "giant robots" hints at the use of advanced technology in the exploitation of natural resources, leading to significant depletion of natural resources and environmental pollution thus demonstrating the scale and potential impact of these activities.

According to Garrard (2004), pollution directly results from human activities that damage the environment locally and cause widespread impacts through the spread of toxic substances. The damage occurring in the "marine wilderness" is indicated to be a direct result of the mining, where "toxin wave" refers to chemical contamination that damages the marine environment. This datum effectively illustrates how mining technology can be a significant source of ecosystem

degradation by spreading pollutants that harm marine life and disrupt the balance of the ecosystem. This narrative not only criticizes the exploitation of natural resources but also highlights the detrimental long-term impacts on the fragile marine environment.

2. Habitat Destruction

This novel not only explains the oceans that are exploited but also the impact of these activities on marine life. When humans exploit the ocean for mineral mining, oil drilling, and other industrial activities, the marine ecosystem will change. Over-exploitation by humans has led to the disruption of natural systems, such as the destruction of habitats and the loss of biodiversity (Garrard, 2004). The animals that live there could all be lost. Some may move to other water areas, but there are already other sea creatures living there, and there isn't enough food, oxygen, or habitat for them all. The ocean is a habitat for various marine species, but humans want to take advantage of marine resources to make a profit. If marine ecosystems and sea creatures are in danger, then so are humans. This novel explains how the ocean, which was once a shelter and source of food for sea creatures, has now turned into hell for its inhabitants.

This analysis shows the impact of pollution that damages marine ecosystems, especially in coastal areas, which are habitats for marine life.

Datum 21

The coastal waters were thick with a type of seaweed called kelp. Undersea forests of tall, leafy stems swayed with the movement of the waves and made a

rich habitat for sea creatures. But as the poison tide spread along the coast, dead kelp began washing ashore. (page 21)

The datum above describes the negative impact of pollution or toxic contamination on marine ecosystems, especially seaweed, which is an important home for underwater life. Initially, the coastal waters were described as a beautiful, fertile place full of seaweed that created an “undersea forest,” but all that disappeared when the toxic wave began to spread. As a result, seaweed that previously thrived began to die and washed up on the beach. This indicates a major disturbance in the marine ecosystem because seaweed is not only a source of life for marine creatures but also plays a role in maintaining water quality and preventing erosion.

In line with Garrard (2004), who states that the most worrying human attack on the environment is air, land, river, and sea pollution caused by dangerous and even deadly substances, and this is all proven in the datum above, which destroys habitats.

3. Loss of Biodiversity

This novel describes how the exploitation of the ocean has a bad impact on marine life, not only habitat destruction but also killing many sea creatures. Over-exploitation by humans has led to the disruption of natural systems, such as the destruction of habitats and the loss of biodiversity (Garrard, 2004). As ecosystems are disrupted, animals lose their homes and food sources, forcing them to look for other places that are already full of other creatures. This condition exacerbates

competition for food, and shelter, which ultimately threatens their survival. This is evidenced by some of the findings below.

The datum explains that the pollution caused by mining kills marine animals and becomes toxic to other animals.

Datum 22

I found a beach that's covered with dead crabs. I've never eaten so good in my life!" "You should not eat those crabs," said Roz. "They could be poisoned." "You know, the crabs do taste a little funny. And I haven't been feeling so good lately." The gull scratched at his bare patch of skin. (page 124)

The datum above shows the impact of pollution on marine life and how the contamination spreads through the food chain. Dead crabs are most likely contaminated by toxic substances derived from the exploitative activities of mining metal minerals in the sea. The seagulls that ate the crabs also began to feel the negative effects, with signs of disease appearing, such as "not feeling well" and skin problems. This means that the pollution not only kills the crabs but also has a chain effect on other creatures that eat the crabs. Dead crabs are the impact of pollution, and this is in line with Garrard's (2004) view that the most worrying human actions to the environment are pollution of the air, soil, rivers, and seas caused by harmful and even deadly substances.

Furthermore, in the novel, a datum describes the impact of pollution on animal death, where birds were found dead on the rocks after eating fish.

Datum 23

"Oh, I know about the poison tide. It came to the coast where I used to live. The other birds were so excited to see dead fish piling up on the rocks. But old Kerplunk knew better. That's my name—Kerplunk. Nice to meet you. Anyway, I

said not to touch the fish. I said something didn't smell right, but nobody would listen. They gobbled down as many fish as they could. And pretty soon, the rocks were piling up with dead birds. (page 84)

This text explains the adverse effects of marine pollution, which not only causes damage to ecosystems but also triggers high mortality rates in seabirds. The text articulates: "Oh, I'm aware of that damaging wave. The wave arrived at the coastline where I lived before. Other bird creatures show great enthusiasm when they find a school of dead fish... I expressed my concern about the unpleasant smell, but my warning was not heeded. They eat an alarming amount of fish. As a result, it wasn't long before the rocky area was filled with lifeless birds."

In Garrard (2004) argues about pollution, it is said that pollution is one of the most dangerous human violations against the environment, where harmful substances can cause the destruction of ecosystems and endanger the existence of various forms of life. The text exemplifies how ocean pollution, characterized as "toxic waves", can result in widespread deaths among seabirds that depend on contaminated fish as a food source.

"The other birds were so happy to see the dead fish piled up... But no one wants to listen... Moreover, before long, the rocks were filled with dead birds." This statement underscores the dangerous dangers of pollution that remain invisible but produce catastrophic consequences. While fish seem to represent an abundant food source, in reality, they are contaminated with deadly toxins. As a result, this phenomenon results in widespread mortality among bird species that remain unaware of the inherent threat.

This damaging pollution infiltrates the food web, disrupts the balance of ecosystems, and exemplifies the detrimental impact of anthropogenic activities on nature. Flocks of birds that swallow contaminated fish eventually die, thus illustrating how fatal pollution is to animal life.

C. The Effort of The Main Character to Stop the Impacts of the Apocalypse in Peter Brown's *The Wild Robot Protects*

In this section, the researcher analyses Roz's actions as the main character in stopping environmental damage in the novel *The Wild Robot Protects*. In this novel, humans realize the environmental damage caused by their actions. They begin to think about Roz's warning about the impact of their activities on the surrounding environment. The steps taken by Roz can be analyzed through the lens of environmental ethics, particularly focusing on the principles of cosmic solidarity and respect for nature. These steps reflect Roz's understanding of the interconnectedness of all living beings and the importance of respecting nature in order to restore balance and prevent further ecological destruction. According to environmental ethics, the moral relationship between humans and nature contradicts the conventional anthropocentric perspective, which considers humans to have moral superiority and the right to utilize nature for their personal benefit (Keraf, 2010). Roz's actions exemplify a shift away from anthropocentrism, embracing a more holistic and egalitarian view of nature, where all beings are interconnected and deserving of respect.

1. Cosmic Solidarity

To stop the toxic tide spreading from deep-sea mining, Roz seeks help from the oldest known sea creatures: ancient sharks. She hopes that with the help of this ancient shark, she can direct other sea creatures to work together to destroy mining operations that are destroying the marine ecosystem. According to Keraf (2010), the ability to feel the suffering of animals causes a sense of cosmic solidarity to emerge. This includes adopting environmentally friendly policies and rejecting actions that destroy nature. The ancient shark, as the oldest creature in the sea, plays a key role by using its influence to rally other sea creatures. This collective action, led by the shark and initiated by Roz, exemplifies cosmic solidarity, where all beings, large and small, unite for a greater purpose: to protect and restore balance within the ecosystem.

Datum 24

For such a fearsome-looking creature, the shark had a surprisingly soft voice. "We meet at last, Roz." The robot replied, "How do you know my name?" "Oh, I have eyes and ears all across the north," said the shark. "I've been following your travels with great interest. I know the poison tide came to your island and now you're on a mission to stop it. I know about the creatures you encountered on your voyage. I even know about your journey through the glacier. I'm glad you survived. I wasn't sure you'd make it out." (page 106)

In the datum above, although the shark appears scary, it speaks to Roz in a soft voice, showing understanding or empathy. The shark not only knows Roz's name but also knows how Roz is travelling to stop the "poison tide" that is harmful to the ecosystem. This action shows that, as a sea creature, the shark considers itself part of the environmental problems Roz and other creatures face. The shark has "eyes and ears all over the north", which means that it knows and understands what

is happening in the surrounding ecosystem, including what Roz is doing and her goals.

The datum above can be considered a form of cosmic solidarity where the shark appears to be connected to Roz in a common mission to save the environment, even though they are different species. The shark's concern for Roz's condition and understanding of her mission shows that there is a moral connection and shared responsibility between the living beings in this story.

Subsequent datum analysis shows the cooperation of animals fighting mining activities that destroy marine ecosystems.

Datum 25

The crew stared in disbelief at the chaos outside. Animals had taken over the sea and the sky. Whales were sending wave after mountainous wave crashing against the station. And, mysteriously, the water was glowing pale blue. Something was wrong with the engines. The crew had no idea that the engines were under attack by a vast swarm of zooplanktons. More of those tiny creatures kept joining the fight, and now a glowing sludge was thickening and hardening around the propellers. The engines strained and struggled. There was a terrible gnashing noise, and then each of the propellers ground to a halt. (page 151).

The datum above shows that all living things are responsible for protecting the ecosystem. In situations like this, various marine creatures work together to fight against ocean mining that destroys their habitat. According to Keraf (2010), the ability to feel the suffering of other creatures gives rise to a sense of cosmic solidarity; this is what is seen when marine animals realize the adverse impacts of mining and respond with collective action.

Every marine creature, large and small, showed a sense of responsibility for the balance of their ecosystem as if sensing and responding to the damage that threatened. Various marine species, from whales creating huge waves to zooplankton clogging the mining station's machinery, joined forces in an effort to protect their environment. This solidarity reflects the empathy described by Keraf as the basis for cosmic solidarity, where living beings act together to maintain their survival and the balance of nature.

2. Respect for Nature

Realizing that environmental damage cannot be addressed with the help of sea creatures alone, Roz decided to approach humans and negotiate with them. This step reflects the principle of respect for nature, where Roz tries to stop mining activities that damage marine ecosystems through dialog and mutual understanding. As part of an ecological community, humans must respect nature; according to Keraf (2010), this is a basic principle for humans as part of nature because, as an ecological community, they must respect each other, maintain common life, and value nature as a home in an ecological network.

Datum 26

The mining station manager had promised to clean up the poison tide, and she was keeping her word. Specialized robots had been sent to follow the poison tide's path and to remove the toxic dust as they went. Different robots worked in different ways. Some had wide spinning drums that skimmed dust from the surface of the ocean. Others roamed the depths, using magnets to collect the metallic particles. (page 183)

In the datum above, the mining station manager makes good on his promise to clean up the poison tide caused by mining activities. Specialized robots are sent

to follow the path of the poison tide and clean up the scattered toxic dust. Different types of robots were used to tackle the pollution, each in a different way-some used wide rotating drums to filter dust from the ocean surface, while others used magnets to collect metal particles in the ocean depths.

This move reflects human efforts to restore the balance of nature after realizing the adverse effects of their activities, which is in line with the principle of respect for nature. By emphasizing the importance of stopping activities that damage the environment, Roz inspires people to respect and restore the balance of nature. Roz's negotiations succeeded in changing human understanding of the impact of their actions on the environment. Eventually, humans agreed to send in cleaning robots to tackle the pollution that had contaminated the oceans. The principle of preserving life together and allowing all living things to flourish in their proper place, as described by Keraf (2010), is evident in Roz's respectful efforts to restore the marine ecosystem. People's actions to clean up this pollution are a manifestation of their sense of responsibility towards the environment, underpinning the restoration of nature and showing respect for marine ecosystems as part of a larger ecological network.

Further datum analysis highlights Roz's fight with the mining robots, which are a direct representation of the destructive forces threatening the marine ecosystem.

Datum 27

Roz wanted to put an end to those dust clouds, but to do that, she would have to stop Crusher. She was no match for his size and strength. Our robot would have to rely on her wits. (page 165)

In the datum above, Roz attempts to identify and stop mining activities that are damaging the marine environment by facing Crusher, a giant mining machine. Despite facing a much bigger and stronger opponent, Roz chooses not to rely on unbalanced physical strength. Instead, she decided to use her wits to overcome this challenge.

Roz's actions reflect the principle of respect for nature, where she seeks to maintain the balance of the ecosystem without adding to the damage. Rather than acting aggressively, in this case Roz considers the sustainability of nature in a thoughtful and respectful way towards an already threatened environment. Therefore, Roz not only focuses on achieving her goals but also puts forward the principle of maintaining common life in the ecosystem, this is in line with Keraf (2010), as part of the ecological community, humans must respect nature, maintain common life, and allow all living things to develop in their place.

CHAPTER V

CONCLUSION AND SUGGESTION

This chapter provides conclusions based on the previous discussion in the first part and suggestions to readers and future researchers who are interested in studying this novel or using the same theoretical approach in the second part.

A. Conclusion

The study analyzes the ecological apocalypse contained in the novel *The Wild Robot Protects* using Garrard's ecocritical theory. Based on the analysis above, the researcher concludes that humans and nature are related. The researcher found that there are actions taken by humans that cause damage to nature. They carry out excessive mining activities that cause significant environmental damage such as habitat destruction, loss of biodiversity, damage to marine ecosystems, depletion of natural resources, and the spread of toxic pollution. In addition, these activities also disrupt the balance of nature and jeopardize the survival of various species, especially marine species. The death of many animals will affect the balance of nature and cause significant problems in the food chain. Through her struggle, Roz applied an environmental ethic that sought to stop the mining activity and remedy the impacts it caused, demonstrating efforts to restore the marine ecosystem and protect the life that depends on it. Roz's actions affirm the principles of environmental ethics, such as the responsibility to protect nature and maintain the balance of the ecosystem, reflecting the importance of ecological awareness in maintaining the sustainability of nature. Therefore, this study reveals how

uncontrolled human activities can cause ecological damage to ecosystems that are supposed to take care of each other.

Despite the main character's efforts to stop the ecological damage to clean up the impacts caused to the marine ecosystem, such as pollution, loss of marine life, habitats, and food chains, the ecological damage cannot be restored easily, so the act of stopping the source of the problem as a recovery step can only cover the damage that has already occurred and cannot be avoid.

B. Suggestion

This research focuses on ecological criticism by Garrard (2004) and human activities that cause ecological damage. However, many topics and themes in Peter Brown's novel *The Wild Robot Protects* can be explored using alternative theories and perspectives. The researcher also suggests analyzing this novel using Ecofeminism to explore literary works more deeply and focus on aspects of the main character. Therefore, the researcher hopes that future researchers can use relevant theories to analyze this novel.

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