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Media, Ocean Culture, and Marine Resources: Use of Social Media to Conserve Marine Resources

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Abstract—Media functions as a forum for resolving limitations in human senses, space and time in communication. The increasing population of living creatures also increases pressure on the sea which has the potential to damage marine ecosystems. As one of the most popular media, social media can be a communication tool to increase awareness and preserve marine resources as an important key to human survival. By studying literature through various articles, data and books, I found that communication has extraordinary persuasive abilities to influence human thought patterns through social media as material for daily consumption. Despite the limitations of space and time, humans can access various information and education in the maritime sector. This research provides insight into the potential and importance of communication on social media as a tool to fight for the preservation of marine resources which are important for the sustainability of marine ecosystems and human life, as well as raising awareness of the importance of managing marine resources well.

Keywords-Communication; Social media; Marine Resources.

I. INTRODUCTION

Marine resources are very important in the global era and ecosystem because they provide important services such as food, energy, and climate control.(Canonico et al., 2019). The vast ocean, covering more than 70% of the Earth's surface, is essential for the maintenance of life, supporting biodiversity, and the provision of ecosystem services that offer benefits to billions of individuals worldwide(Malde et al., 2020). The economic importance of living marine resources is enormous, as they make a significant contribution to the marine economy and international trade in fish and fishery products with millions of people employed and billions of dollars generated annually(Marshak & Link, 2021). Seeing that this includes the economic sector, it means that it is important for the state revenue budget which has entered the realm of government. Therefore, the government also

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has an important role in regulating the marine sector. Marine ecosystems also have a significant impact in addressing worldwide problems such as water pollution, ocean acidification, and global warming by utilizing resources such as macroalgae in a sustainable and innovative manner. These resources provide environmentally friendly food sources and natural compounds for various industries(García-Poza et al., 2022).

Social media has emerged as a powerful tool for spreading messages regarding marine resource conservation, due to its capacity to positively impact public perception and behavior. Research has shown that positively presented content on social media can reduce fear of sharks and correct misunderstandings about the intent of shark attacks, ultimately advancing shark conservation efforts(Casola et al., 2022). Additionally, social media platforms have been used to monitor stranded cetaceans, providing important data for conservation initiatives in Chinese waters, and demonstrating the potential of citizen science programs in increasing public awareness of marine mammal conservation(Liu et al., 2022). Conservation biologists are also progressively using social media for the purpose of engaging in communications with the broader public, recognizing its efficacy in expanding reach and fostering environmental awareness(Shrader & Louw, 2023). Not only that, according to(Of et al., 2022)Social media has a significant function in influencing environmental policy through increasing awareness and facilitating interaction between various stakeholders and policy makers, thereby influencing the conservation of marine resources.

II. RESEARCH METHODS

In this research, I used the literature study data collection method. This method aims to analyze or investigate cases that have been previously written about on a certain topic. This involves reviewing relevant works, such as books, journal articles, reports, and other sources related to the research subject.This method is commonly used in qualitative research, where the emphasis is on describing phenomena in their overall context and highlighting processes and meaning from the subject's point of view, rather than gaining insight through procedures orcalculation(Trujillo, 2021). Literature research methods are usually used in research in the fields of social sciences, humanities, natural sciences, and other fields where there is a lot of relevant research and literature to analyze.

III. RESULTS AND DISCUSSION

1. Problems and challenges

Marine resources face many constraints, including biofouling, corrosion, unsustainable fisheries, marine pollution, climate change, and marine ecosystem degradation. The maritime sector is grappling with long-lasting biofouling and corrosion problems, hindering progress on cost-effective and environmentally friendly solutions(Rayner et al., 2019). Marine ecosystems are experiencing overuse, irreversible transformation, declining biodiversity, and diminishing ecosystem services due to conventional perceptions of the ocean as a waste site and unlimited resource(Brears, 2021). Various types of waste damage the marine ecosystem, especially plastic waste.Plastic waste, including microplastics and nanoplastics, contains harmful chemicals and endocrine disruptors, impacting marine life throughout the food chain(Sogabe & Takatsuji, 2021). Garbage can also ensnare marine life such as turtles, small fish, dolphins, etc. Not only that, there have also been many cases of sea dwellers who unexpectedly had to eat bottle waste thrown away by humans on purpose. According to(Roy Chowdhury et al., 2023), plastic waste modifies marine communities and ecological processes, leading to oxygen-deficient environments, reduced primary productivity, and reduced populations of benthic invertebrates.

Natural factors such as climate also pose challenges for the marine sector. Climate change has important effects on biodiversity through changes in species distribution and community structure, resulting in modifications of species richness, phylogenetic diversity, and habitat suitability. Research shows that many species are not moving as expected, indicating changes that vary in direction and extent across different taxonomic groups and aspects (Rubenstein et al., 2023). In addition, the geographic distribution of endangered plant species is affected by climate change, underscoring the importance of implementing comprehensive conservation strategies to protect habitats and ensure the continued existence of these species(Voskamp et al., 2022). But this is not necessarily original because of how the climate changes.The impacts of climate change on marine resources are exacerbated by increasing pressures, with many marine resources already fully or over-exploited, highlighting the urgency to minimize the effects of climate change on food security and resource sustainability. Understanding these complex interactions is critical to developing effective conservation and management strategies to mitigate the adverse effects of climate change on marine resources.

Public awareness and understanding regarding the protection of marine resources is also very important for sustainable marine management. However, research shows that students in coastal areas often lack knowledge about marine ecosystems and sustainable seafood consumption(Liao & Chang, 2021). This lack of knowledge makes people increasingly indifferent and live in their comfort zone because they do not know about wider marine resources.Quoting Gelcich's research in 2024,Across Europe, it shows that the level of public concern about marine impacts is only closely related to the level of information they receive. Pollution and overfishing are high priorities in policy development. Why is that possible, because the news only focuses on the same problems. This means that the information disseminated is not comprehensive.

IV. The role of social media in marine conservation communication

1. Education and Information

Leveraging social media platforms offers a cost-effective and effective method for interacting with the general public, as well as raising awareness, and advocating for marine conservation on a global scale. Social media fulfills an important function in marine conservation through its use as a powerful instrument for the dissemination of knowledge and information. According to(Casola et al., 2022)Research has shown that social media content with a positive orientation has the capacity to reduce shark-related concerns, change misconceptions regarding the motives for shark attacks, and increase support for conservation initiatives. Education about marine conservation can increase one's insight and knowledge to continue preserving the ocean. Additionally, efforts such as the Bake Off Endangered Species competition exemplify the capacity of social media to promote awareness about nationally designated endangered species. This was observed alongside the need to address taxonomic partiality and underscored the importance of less favored but equally threatened species such as plants in conveying conservation messages(Forster et al., 2023).

Social media is also a place to accommodate anyone's creativity. Interesting and entertaining content tends to be liked by the audience so that the message you want to convey will be easily accepted. Visually appealing materials play an important role in the efficient transmission of messages, especially in the fields of health communications and marketing. Studies show that thoughtfully crafted visual aids serve as a powerful mechanism for conveying health-related data in a clear and engaging manner to less skilled individuals, thereby increasing retention and understanding of the message conveyed.(Woloshin et al., 2023). Furthermore, utilization of aesthetic appeal in motivational text messages did not show a significant impact on their efficacy in promoting physical activity, suggesting that visual elements alone may not increase motivation in this specific context(Niu et al., 2020). Additionally, research shows that the integration of visuals and text in infographics results in increased levels of issue-specific cognitive processing when compared to messages relying solely on text or illustrations, underscoring the importance of visual components in the comprehension of persuasive messages, especially in the field of environmental advocacy(Duro et al., 2019). Therefore, the incorporation of visually stimulating content, such as visual metaphors and infographics, has the potential to increase reception and engagement with messages across a variety of domains.

2. Engagement and interaction

The role of social media can also be maximized by involvement and interaction in online discussions or campaigns. About preserving marine resources. Engagement in online discussions and campaigns regarding marine conservation is critical in engaging the public and advancing conservation efforts. Study shows that marine citizen science offers a hopeful pathway to increasing participation in marine conservation on a global scale, underscoring the importance of public engagement in scientific research(Kelly et al., 2020). Furthermore, the use of participatory video has been shown to facilitate communication between indigenous groups and policy makers, promoting openness, responsibility, and recognition of diverse viewpoints in protected area monitoring, ultimately leading to equity in conservation efforts(Gao et al., 2022). Additionally, the incorporation of new media platforms in marine ecological governance can strengthen public engagement, direct regulatory approaches, and encourage active engagement of shoreline communities, emphasizing the importance of leveraging technology for efficient marine conservation initiatives(Mistry et al., 2023).

For communication on social media, we can also use several features that are now available on social media. For example Instagram. By communicating through fun polls, quizzes that can increase maritime insight, and challenges that can involve the audience. Not only that, collaboration with environmental organizations, scientists and brands that care about the environment is also a tool for disseminating information and spreading messages. Environmental organizations play a critical role in the field of marine conservation efforts, often engaging in partnerships with multiple stakeholders to address complex

challenges. Scientific studies underscore the importance of building multi-sector networks and encouraging collaboration between non-governmental organizations (NGOs) to increase the efficacy of marine conservation initiatives(Haas et al., 2021). Not only that, regional fisheries management organizations (RFMOs) are recognized as important entities in overseeing international fisheries activities and contributing to the realization of Sustainable Development Goal 14 (SDG 14) regarding the sustainable use of marine resources(Chambers et al., 2019). These entities are indispensable for enacting conservation strategies and regulatory frameworks aimed at reducing problems such as overfishing and preserving marine biodiversity. Nonetheless, there is an urgent need to increase synergies among neighboring or overlapping organizations to design and implement conservation measures efficiently, underscoring the need for consensus on biodiversity governance in areas beyond national jurisdiction(Bell et al., 2019).

3. Collaboration and partnership

Building partnerships plays an important role in broadening the reach of marine conservation messages. Collaborative efforts, exemplified by initiatives such as the Ocean Collaboration (CoLab), bring together diverse organizations to convey the comprehensive significance of the ocean, instigate broader humanitarian principles, and increase engagement in marine conservation(Ban et al., 2020). Furthermore, interdisciplinary partnerships, illustrated by beluga whale monitoring efforts, demonstrate the benefits of combining multiple partners, technologies, and resources to effectively scale monitoring activities(Chambers et al., 2019). Community-based marine conservation projects, as evidenced in Mexico, utilize existing resources and engage local communities in successfully advancing conservation goals(Westphal et al., 2022). Through the formation of partnerships, knowledge exchange, and collaborative efforts, organizations can build a shared narrative for the ocean, resulting in more impactful conservation outcomes and increased awareness in society.

V. CASE STUDY

One illustrative case study of communication on social media regarding marine resources is an examination conducted by Cutler et al., who examined discussions about electronic monitoring among stakeholders in Northeast US fisheries on Twitter(Cutler et al., 2022). This investigation demonstrates the importance of social media in enabling conversation and collaboration between environmental non-governmental organizations, government agencies, and industry stakeholders on policies related to electronic monitoring in the Northeast groundfish fishery. Furthermore, Krželj et al. underscores the effective engagement of citizen marine scientists through social media platforms to collect ecological information about marine species such as the bearded fireworm(Casola et al., 2022). Through the use of social media platforms, this research illustrates how communication in the digital sphere can enrich stakeholder engagement, encourage citizen science initiatives, and contribute to the conservation and administration of marine resources. A study of Savesharks Indonesia's online campaign on Twitter shows the capacity of social media activism to raise awareness about shark conservation efforts and engage individuals in online and offline activism. This underscores the significant influence of online environmental advocacy on real political measures(Hersinta & Sofia, 2022).

Case study analysis of communication on social media regarding marine resources reveals various dimensions. The use of social media has revolutionized communication in various sectors, including maritime English, demonstrating its efficacy in improving communication(Natsir & Saragih, 2023). Online environmental activism, exemplified by Savesharks Indonesia's advocacy on Twitter, has illustrated the capacity to raise awareness about important marine conservation issues, despite doubts about the real impacts and outcomes of such activism(Hersinta & Sofia, 2022). Additionally, the use of digital marketing tactics, such as free shipping services via Facebook, has proven effective in attracting consumers and increasing profits for companies in the marine sector(Anwar, 2022). Additionally, the incorporation of electronic monitoring systems in fisheries has reduced stakeholder engagement and dialogue about policies and efforts via social media platforms such as Twitter, underscoring the importance of communication between stakeholders for collaborative fisheries initiatives(Cutler et al., 2022). Efficient science communication frameworks, as evidenced by the Triton Initiative, play a critical role in disseminating research findings to industry stakeholders for informed decision-making regarding marine energy projects(Gunn et al., 2022).

VI.CONCLUSION

Marine resources, which include various ecosystems, are valuable assets for life on earth. However, increasing human pressure on the ocean, including through overfishing, waste dumping and climate change, has caused serious damage to marine ecosystems. One way to overcome this threat is to take advantage of current developments. One way is through social media. In

this era, millions of people are connected via platforms such as Facebook, Instagram and Twitter which have the power to spread information and influence behavior enormously. An effective way to use social media in marine conservation efforts is through targeted education, the use of interesting visual content, involvement or action to interact directly with the audience, encouraging them to take real action. In addition, collaborative partnerships with experts, environmental organizations and brands that care about the environment can expand the reach of messages to preserve the ocean. By utilizing social media effectively, we have a great opportunity to build awareness, inspire action, and mobilize support for marine resource conservation. In conclusion, with the right steps we can play an active role in preserving the sea for future generations.

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