



Coating Marine Pollution Due To Sludge Oil Coming From The Outer Of Port Limit Which Impact On The Coastal Area Of Bintan Indonesia

Atika Thahira^{1*}

Zainul Daulay²

Ferdi³

Syofirman Syofyan⁴

^{1*}Doctor of Law Student, Faculty of Law, Andalas University, Email:atikathahiraswim@gmail.com

²Professor of Law, Faculty of Law, Andalas University, Email:zdaulay@gmail.com

³Lecturer of Law, Faculty of Law, Andalas University, Email:ferdisahmah@gmail.com

⁴Lecturer of Law, Faculty of Law, Andalas University, Email:firman.justisia@gmail.com

***Corresponding Author:** Atika Thahira

*Doctor of Law Student, Faculty of Law, Andalas University, Email:atikathahiraswim@gmail.com

Abstract

One source of marine pollution is sludge oil from ship activities, which is then spread by currents and winds. Such as the contamination of the Indonesian Bintan Coast by sludge oil that has occurred every year, since 1970, which is thought to have come from the Outer of Port Limit east of the Singapore Strait. The countermeasure carried out by the local government is to clean the coast and collect the Sludge oil. This article is the result of research on pollution prevention. This research methodology uses Doctrinal legal research with a statutory, conceptual and case approach. Based on the results of this study, the solution to overcome pollution at the outer port limit is with the principle of cooperation for littoral states and user states in the Singapore strait based on agreements because the settlement of cases is not easy to prove a causal relationship between pollution and pollutants through scientific evidence. , so that the source of the pollutant cannot be known (unknown). The solution that can be done is to establish the jurisdiction of the outer port limit between the littoral state in the Singapore Strait and apply the principle of cooperation with bilateral or multilateral cooperation agreements between the littoral state and the user state in the Singapore Strait. That this method is more effective and faster in resolution and can avoid conflict. The solution that can be done is to establish the jurisdiction of the outer port limit between the littoral state in the Singapore Strait and apply the principle of cooperation with bilateral or multilateral cooperation agreements between the littoral state and the user state in the Singapore Strait. That this method is more effective and faster in resolution and can avoid conflict. The solution that can be done is to establish the jurisdiction of the outer port limit between the littoral state in the Singapore Strait and apply the principle of cooperation with bilateral or multilateral cooperation agreements between the littoral state and the user state in the Singapore Strait. That this method is more effective and faster in resolution and can avoid conflict.

Keywords: Countermeasures, Marine Pollution, Sludge Oil, Outer of port Limit, Bintan Indonesia

Introduction

Pollution of the marine environment is a problem that cannot be ignored in human life today. Serious attention and proper handling must be done immediately, considering that pollution of the marine environment is something that can threaten human survival. The sea or the marine environment is one of the common property of mankind which is vulnerable to the potential for environmental pollution. Based on Article 1 (4) UNCLOS 1982, pollution of the sea or the marine environment can essentially interfere with maritime functions. Damage or pollution of an environment occurs because of human thought that is anthropocentrism. There is a dichotomy between anthropocentrism and ecocentrism.(Rülke et al., 2020)Then the concept emerged as a bridge between anthropocentric and ecocentrism mindsets with the principle of sustainable

development. Sustainable development is included in the Brundtland Commission report. In the 1987 Brundtland Commission, development must meet the needs of the present generation without compromising the ability of future generations to meet their own needs. (Bila-Isia Inogwabini, 1994)

Furthermore, related to environmental pollution at sea, one of the pollutions of the marine environment that occurs is marine pollution originating from activities at sea which have an impact on the contamination of the northern coast of Bintan Island due to Sludge oil originating from out port limit (OPL). (Again, Black Oil Waste Contaminates the Coast of Pengudang Bintan Village, This is a Complaint by Tourism Managers - Tribunbatam.Id, nd) (Preventing Waste Oil from Contaminating Bintan and Batam Waters - ANTARA News, nd) Sludge oil comes from the ship's cleaning tank. This pollution has been going on for years and has never been resolved. Pollution is exacerbated during the northern monsoon. Bintan is one part of the Indonesian marine waters which is also the littoral state of the Singapore Strait. That there is also a user state in the Singapore Strait. International shipping lanes use the Straits of Malacca and the Straits of Singapore as international trade access from the west to East Asia or vice versa. (Nurwahidin, Amarullah, 2020)

Pollution that occurred on the coast of Bintan has occurred for years, this pollution has occurred since 1970. (exposure of DEPUTY FOR COORDINATION OF NATURAL RESOURCES AND SERVICES, 2019) Oil spills can spread to the sea. The distribution of marine oil spills is influenced by various factors, among others, the wind and currents that occur around the location of the oil spill, the amount of oil, the characteristics of the oil, and the tides. This oil spill can be spread in the form of an oil layer or emulsion. Oil that has been dispersed or that has moved from its initial location, has the same state and properties as oil when it spilled at its initial location. (Suwedi, 2017) The frequency of occurrence can have a big impact in the long term.

The pollution problem faced is in managing marine resources in a sustainable manner in the waters of Bintan Island. The waste of the oil spill in Bintan has disrupted the balance of marine life, even the impact has disrupted the coast of Bintan Island. (Purnaweni et al., 2022) This problem also has an impact on the community, especially for fishermen, namely destroying some fishing gear and protecting marine biota, as well as for tourism in a very large area because the coastal sea is polluted due to oil mud and pollution. Conditions get worse during the northern monsoon. Marine pollution is an event that is not desired by humans, especially for people whose lives depend on the sea. (Sukanda, 2016)

Efforts are being made to clean the coast from sludge oil contamination by the Regional Government. However, these efforts do not stop the contamination that continues to occur every year. This has become a challenge for stakeholders in the environmental sector to solve the problem by dealing with the pollution that has been happening for years and when the north wind season blows from the north to the coastal seas of Bintan Regency, the volume of sludge oil is increasing. One of the legal problems in marine environmental pollution cases is the problem of evidence related to scientific verification to explain the causal relationship between pollution and the source of pollution, as well as to determine the source of pollution. It is not yet known who is responsible. There needs to be a common will from countries to comply with international law on the use of the sea together. If countries comply with international law, there is a common will to jointly deal with pollution of adjacent waters based on international agreements.

Method

Legal research is a field of study concerned with the effective marshaling of authorities that bear on a question of law. (Dyah Ochtorina Susanti & A'an Efendi, 2022) Legal research is a know-how activity in legal science, not just know-about. As a know-how activity, legal research is carried out to solve legal problems encountered. The research methodology uses normative or doctrinal legal research with statutory, conceptual and case approach. (Marzuki, 2017) This research is prescriptive, namely research that aims to provide an overview or formulate a problem in accordance with the existing circumstances or facts. (H. Salim HS And Erlies Septiana Nurbani, 2013) Legal materials that have been obtained from field studies and literature will be processed qualitatively. The study area is Bintan Island. Bintan Island is part of Indonesian marine waters which is also the littoral state of the Singapore Strait and there are user state within Singapore strait

Results and Discussion

There has been marine pollution originating from activities or activities at sea which have an impact on the contamination of the northern coast of Bintan Island due to oil discharge in the form of Sludge oil, which is sourced from ship activities originating from out port limit (OPL)..(Again, Black Oil Waste Contaminates the Coast of Pengudang Bintan Village, This is a Complaint by Tourism Managers - Tribunbatam.Id, nd)(Preventing Waste Oil from Contaminating Bintan and Batam Waters - ANTARA News, nd)This pollution has been going on since 1970 and has never been resolved.(exposure of DEPUTY FOR COORDINATION OF NATURAL RESOURCES AND SERVICES, 2019)OPL Violations Often Occur Due To Misunderstanding Of OPL Areas.(SPICA Services (INDONESIA), nd)one of which is the impact on the Bintan coast as follows:

Figure 1 Areas Affected by the Oil Spill (Sludge oil) in Bintan



Source: Bintan Regency Environmental Service

Based on the picture above, the total length of the beach affected by the discharge of sludge oil in the waters of Bintan Regency is 101.441 KM. The findings of sludge oil consist of black liquid oil, small and large lumps, in the form of sacks and burlap packaging, as well as fine flakes.(Department of the Environment of Bintan Regency, nd).

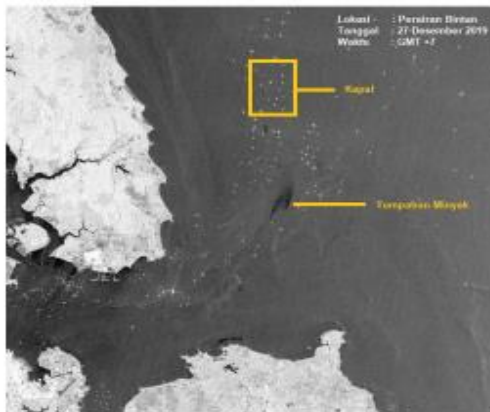
Figure 2 Marine pollution due to sludge oil on Bintan Island



Source: Source: Bintan Regency Environmental Service

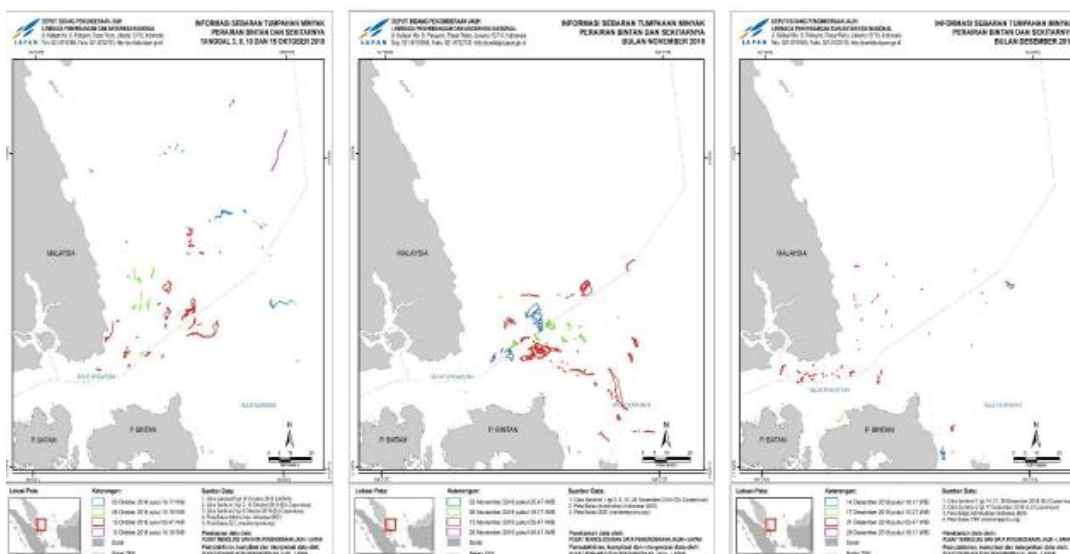
Several news reports stated that sludge oil was the result of ship activities, namely tank cleaning at OPL. The results of data processing using SNAP software, show that there are some areas that have a darker appearance (dark spots). The dark spot in the data is the area affected by the oil spill, while the white point along the area is the object of the ship.(Puspitasari et al., 2020)From the picture, it can be seen that the oil spill in the Lagoi area (north coast of Bintan) is thought to have originated from international waters (a distance of 30-50 meters) which spread to the Lagoi area and its surroundings. as from the following satellites:

Figure 3 Sentinel-1 Satellite Image Data Processing Results on 27



Source: Puspitasari TA, Fuad MAZ and Parwati E 2020 Prediction of Oil Spill Distribution Patterns Using Sentinel-1 Satellite Imagery Data in Bintan Waters, Riau Islands J. Remote Sensing and Processing. Digit Image Data. 17 89-102.

In taking countermeasures, there are problems, including regarding jurisdiction regarding the unfinished sea boundary line in the Singapore Strait, namely the border line between Indonesia and Singapore to the east of the Singapore Strait. The maritime boundaries are the eastern boundary 1 between Batam and Changi and the eastern side 2 Bintan, Pedra Branca, Middle Rock and South Ledges. (Ireawati, 2009) The completion of the boundary line on the eastern side of the sea 1 will await the completion of the boundary line on the east side 2 Bintan Pedra Branca Middle Rock and South Ledge The boundary line issue on the east side 2 is not only related to issues between Indonesia and Singapore but also between Singapore and Malaysia . (Ireawati, 2009)



Description: Satellite data from KKP and LAPAN show that oil spills occur in the same location and repeat every year.

Source: Deputy for Coordination of Natural Resources and Services, "Continued Coordination Meeting for the Acceleration of Resolving Oil Spill Cases in Batam-Bintan Waters, Riau Islands Province".

From several incidents of maritime environmental pollution that are commonly found on the coast of the island of Bintan in the North season (estimated every November-April). in the form of black oil waste that has clotted, but to ensure the type or category further research needs to be done through testing in the laboratory. But on the other hand, if the oil has been mixed with other ingredients or in other words it can be categorized as waste, it will be difficult to estimate the source of the pollutant. The distribution of the oil spill is influenced by various factors, including: wind and currents that occur around the location of the oil spill, the amount of oil,

characteristics of the oil, and tides. This oil spill can be spread in the form of an oil layer or emulsion.(Suwedi, 2017)The wind conditions in the North Season in the Bintan Waters blow predominantly from the Northeast to the Southwest with an average speed of 3.6 – 5.7 meters/second. The speed of this season is one of the most influencing currents movement that causes the displacement of oil spills in the waters, because it has the highest speed compared to other seasons.(Puspitasari et al., 2020). This is what causes all the dirt or garbage floating in the north of Bintan Island to be brought ashore, especially on the north coast of Bintan Island.(Kingong Satria Negara, 2020)Thus, these factors become obstacles in determining the source of the pollutant or proving a causal relationship between the pollutant and the contamination.

The issue of pollution of the marine environment at the global level is specifically regulated in the United Nations on the Law of the Sea (UNCLOS 1982), Besides these general rules, UNCLOS includes special rules for Part XII.(Walker, 2012)Every country has an obligation to protect and preserve its marine environment as stipulated in Article 192 of UNCLOS 1982. This obligation is then followed by the granting of rights to the state over the management of its natural resources at sea. Article 193. Furthermore, the provisions of Article 197 of UNCLOS 1982 states that the protection of the marine environment can be carried out by countries individually or collectively, regionally, globally, or involving competent international organizations. Article 194 paragraphs (1) and (2) of UNCLOS 1982 regulates state actions to prevent, reduce, and control pollution of the marine environment. Furthermore, regarding the liability for compensation, Article 235 of UNCLOS 1982 affirms that every country is responsible for fulfilling international obligations concerning the protection and preservation of the marine environment. In addition, the regulation of the law of the marine environment is also inseparable from the provisions issued by the International Maritime Organization (IMO) such as MARPOL 73/78.(Sukanda, 2016)The problem of marine environmental pollution is also discussed in regional forums at the regional level other than at the global level. one of them held the Tripartite (Indonesia, Malaysia and Singapore) Agreement 1977. One of them was The three governments agreed on the need for tripartite cooperation on the safety of navigation in the two straits.(Hasjim Djalal, 2006)

Based on the above provisions, to resolve these problems can be done by applying international law, especially with an agreement, both bilateral and multilateral agreements between the littoral state and the user state can be used for mitigation efforts. this is in line with the application of the principle 24 Stockholm which asserts, Based on the principle 24 Stockholm assert, International matters concerning the protection and improvement of. The environment should be handled in a co-operative spirit by all countries, big and small, on an equal footing. Co-operation through multilateral or bilateral arrangements or other appropriate means is essential to effectively control, prevent, reduce and eliminate adverse environmental effects resulting from activities conducted in all spheres,(United Nations, 1972)This is due to the difficulty of scientifically proving or verifying the causal relationship between pollutants and their contaminants so that the co-operation principle will be more effective and efficient.

The application related to state jurisdiction is that the Singapore Strait littoral state must complete the eastern boundary of the Singapore Strait as described above, so that the jurisdiction of the eastern outer port limit of the Singapore Strait can be determined through an agreement. So that between littoral states can apply the principle of co-operation to deal with pollution and involve the user state in co-operation of pollution prevention. So that it can be formulated in an agreement between the littoral and the user state regarding the protection and management of the marine environment by the littoral and user state as well as regarding the procurement of facilities and infrastructure for joint countermeasures through agreements. For Littoral States have the authority to guard the Straits as stipulated in Article 21 of UNCLOS 1982.(Sabella Ardimasari Aldebaran, 2016)Indonesia, Malaysia and Singapore as littoral states have the authority to protect the Singapore Strait. Regarding the binding power, based on the common consent theory or the theory of common will, is that the nature and binding power of international law is not based on the unilateral will of states, but on the common will of states. If countries are subject to international law, it means that there is an equal willingness of countries to comply with international law. As the Common consent theory according to Oppenheim,(Oguri, 2018)That international law must be a weaker law than municipal law because of the lack of a central authority to enforce international legal rules; nevertheless, a weak law remains law. In addition, he submits that theorists are only divided concerning the

character of international law as 'real' law; in practice, it is constantly recognized as law. Moreover, he continues to claim that the public opinion of all civilized States considers every State legally bound to comply with its rules, ignoring the opinion of those theorists who maintain that international law does not bear the character of real law. Oppenheim claims that different States not only recognize the rules of international law as legally binding in innumerable treaties but also emphasize every day that there is a law between them. (Lassa Oppenheim, 1905)

Conclusion

The source of pollution is the ship's tank cleaning activities carried out in OPL east of the Singapore Strait which have an impact on the Indonesian Bintan coast due to wind and current factors. The type of pollution is sludge oil. It cannot be proven by scientific verification regarding the causal relationship between pollutants and their contaminants, which becomes an obstacle in overcoming pollution. So it is necessary to apply the principle of co-operation.

References

- Bila-Isia Inogwabini. (1994). Ecology and sustainable development. *Trends in Ecology and Evolution*, 9(9), 352. [https://doi.org/10.1016/0169-5347\(94\)90171-6](https://doi.org/10.1016/0169-5347(94)90171-6)
- Dinas Lingkungan Hidup Kabupaten Bintan. (n.d.). Penanggulangan Dampak Pencemaran Pembuangan Minyak Hitam Illegal di Provinsi Kepri Tahun 2020.
- Dyah Ochterina Susanti, A., & A'an Efendi, S. H. M. H. (2022). *Penelitian Hukum: Legal Research*. Sinar Grafika.
- Gembong Satria Negara. (2020). Dampak lingkungan terhadap pencemaran laut di pesisir utara pulau bintan selama musim angin utara. *Jurnal Saintek Maritime*, Volume 20 Nomor 2, Maret 2020, 20, 137–144.
- H. Salim HS And Erlies Septiana Nurbani. (2013). *Penerapan Teori Hukum Pada Penelitian Tesis Dan Disertas*. PT Raja Grafindo Persada.
- hasjim djalal. (2006). *Persoalan Selat Malaka dan Singapura*.
- Ireawati, A. (2009). Dinamika Perbatasan Wilayah Laut di Selat Malaka-Singapura. *Jurnal Penelitian Politik*, 8(November), 183–195.
- Lagi, Limbah Minyak Hitam Cemari Pesisir Pantai Desa Pengudang Bintan, Ini Keluhan Pengelola Wisata - Tribunbatam.id. (n.d.).
- Lassa Oppenheim. (1905). *International Law: A Treatise*. Longmans, Green & Co.
- Marzuki, P. D. M. (2017). *Penelitian Hukum: Edisi Revisi*. Prenada Media.
- Mencegah limbah oli kembali cemari perairan Bintan dan Batam - ANTARA News. (n.d.).
- Nurwahidin, Amarullah, et al. (2020). Kepentingan Negara-Negara Pantai Menghadapi Ancaman Transnational Non State Actor Di Selat Malaka. *Jurnal Maritim Indonesia*, 8, 189–217.
- Oguri, H. (2018). Pacta Sunt Servanda As the Intersubjective but Universal Principle: Oppenheim's Common Consent Within the Family of Nations. *SSRN Electronic Journal*. <https://doi.org/10.2139/SSRN.3363982>
- paparan DEPUTI BIDANG KOORDINASI SUMBERDAYA ALAM DAN JASA. (2019). Rapat koordinasi percepatan penyelesaian kasus tumpahan minyak di perairan batam-bintan, provinsi kepri.
- Purnaweni, H., Saputra, J., Roziqin, A., Kismartini, K., Djumiarti, T., & Seitz, T. (2022). Oil Spill Governance: Evidence from Bintan Island, Indonesia. *Sustainability (Switzerland)*, 14(3), 1–17. <https://doi.org/10.3390/su14031603>
- Puspitasari, T. A., Fuad, M. A. Z., & Parwati, E. (2020). Prediksi Pola Persebaran Tumpahan Minyak Menggunakan Data Citra Satelit Sentinel-1 Di Perairan Bintan, Kepulauan Riau. *Jurnal Penginderaan Jauh Dan Pengolahan Data Citra Digital*, 17(2), 89–102.
- Rülke, J., Rieckmann, M., Nzau, J. M., & Teucher, M. (2020). How ecocentrism and anthropocentrism influence human-environment relationships in a kenyan biodiversity hotspot. *Sustainability (Switzerland)*, 12(19). <https://doi.org/10.3390/su12198213>
- Sabella Ardimasari Aldebaran. (2016). Upaya Littoral States (Indonesia, Malaysia Dan Singapura) Dengan User States Dalam Memberantas Kejahatan Armed Robbery (Perompakan Bersenjata) Di Selat Malaka Tahun 2008-2013. *Journal of International Relations*, 2(2), 72–79.
- SPICA Services (INDONESIA). (n.d.). *Indonesia – vessel detentions (Issue ii)*.
- Sukanda, H. (2016). *Hukum Lingkungan International*. PT Raja Grafindo Persada.
- Suwedi, N. (2017). Model Hubungan Waktu Terjadinya Tumpahan Minyak di Suatu Lokasi dengan Bentuk Sebarannya pada Daerah Terdampak A Relationship Model Between an Occurrence of Oil Spill and its Spread Around an Impacted Area Case Study : Oil Spills on a Coastal Area of the. *Jurnal Teknologi Lingkungan*, 18(1), 104–111.
- United Nations. (1972). *STOCKHOLM DECLARATION 1972" Nations Environment Programme. Report of the United Nations Conference on the Human Environment*, 4.
- Walker, G. K. (2012). *Definitions For The Law Of The Sea*. Nijhoff Publisher.