

## An Investigation to Quantify the Applicability of MARPOL Rules in the Northern Ports of Cyprus

### MARPOL Kurallarının Kıbrıs'ın Kuzey Limanlarında Uygulanabilirliğinin Ölçülmesine Yönelik Bir Araştırma

Türk Denizcilik ve Deniz Bilimleri Dergisi

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#### ABSTRACT

The northern coasts of Cyprus island in the Eastern Mediterranean, are polluted by activities such as growing maritime transportation, recreational usage and tourism activities, consecutively deteriorating marine habitats and disturbing ecosystems. With the enforcement of MARPOL Convention in 1983, a reduction of marine pollution has been observed in all seas and ports of the countries that have accepted it. However, due to the increasing number of ships and growing maritime trade, number of negligences grew, so there was an increase in marine pollution again. Prevention of marine pollution is one of the most important goals of the International Maritime Organization (IMO) which is the enforcing body of MARPOL. The aim of this paper is to investigate and quantify the preventions and precautions practiced in the northern coasts of the Cyprus island. Rules and regulations on marine pollution related subjects, which the ships are held responsible are studied and a questionnaire which covers all relevant and correspondent MARPOL rules is applied to all ships using the northern ports. As a result, it has been revealed that MARPOL inspections of ships registered in TRNC ports are not carried out effectively. However, the rate at which ships apply MARPOL rules has been found to be satisfactory; still many improvements can be made.

**Keywords:** MARPOL Convention, Marine Pollution, Cyprus Island

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## ÖZET

Doğu Akdeniz'de yer alan Kıbrıs adasının kuzey kıyıları, artan deniz ulaşımı, rekreasyonel kullanım ve turizm faaliyetleri, sürekli olarak bozulan deniz habitatları ve ekosistemleri bozma gibi faaliyetlerle kirlenmektedir. MARPOL Sözleşmesinin 1983 yılında yürürlüğe girmesiyle, kabul eden ülkelerin tüm denizlerinde ve limanlarında deniz kirliliğinde azalma gözlemlenmiştir. Ancak artan gemi sayısı ve deniz ticareti nedeniyle ihmaller artmış, bu nedenle deniz kirliliğinde yeniden artış olmuştur. MARPOL sözleşmesinin icra organı olan Uluslararası Denizcilik Örgütü'nün (IMO) en önemli hedeflerinden biri deniz kirliliğinin önlenmesidir. Bu makalenin amacı, Kıbrıs adasının kuzey kıyılarında uygulanan önlem ve önlemleri araştırmak ve ölçmektir. Deniz kirliliği ile ilgili gemilerin sorumlu olduğu konulardaki kural ve yönetmelikler incelenmekte ve kuzey limanlarını kullanan gemilerle ilgili tüm MARPOL kurallarını kapsayan bir anket uygulanmaktadır. Sonuç olarak, KKTC limanlarına kayıtlı gemilerin MARPOL denetimlerinin efektif şekilde yapılmadığını ortaya koymuştur. Buna rağmen gemilerin MARPOL kurallarını uygulama oranlarının tatmin edici olduğu görülmüştür; hala birçok iyileştirme yapılabilir.

**Anahtar sözcükler:** MARPOL Sözleşmesi, Deniz Kirliliği, Kıbrıs Adası

## 1. INTRODUCTION

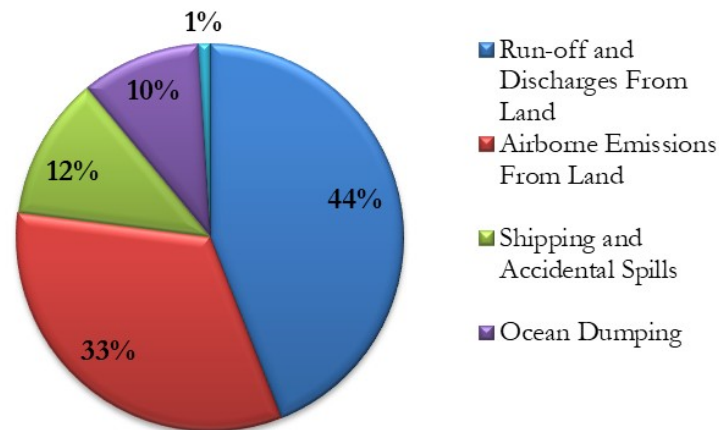
Marine pollution can be defined as the direct or indirect anthropogenic source of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities (UN, 2018). Human activities have a major impact on marine environments. Pollutants released from industrial, agricultural and domestic activities enter the oceans through groundwater, surface water and precipitation. Rapid urbanization and infrastructure development in coastal areas encroach on natural habitats and modify the ecosystem functionings, with changes in currents and nutrient distribution (IAEA, 2019).

The coastline is the triple interface of air, land and sea. Pollution in marine coastal areas is also considered from point and non-point land-based sources, such as rivers, drainage ditches, submarine outfalls and coastal cities. There can be many causes of coastal pollution. The extent of pollution varies depending upon the position (Dwarakish, 2015). The definition of coastal pollution by the World Health Organization (WHO) is the introduction by man, directly or indirectly, of substances or energy into the marine environment, which results or is likely to result in

such deleterious effects such as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities.” (Dwarakish, 2015). In order to reduce marine pollution, OILPOL convention has been signed in 1954, for the prevention and controlling oil spills (United Nations, 2020). This convention was not successful and the accidents did not cease to occur. Following the highly publicized event of Torrey Canyon in 1967, MARPOL convention has been signed in 1973, has been revised in 1978 and has been taken into force in 1983. With MARPOL convention in action, a significant decrease of petroleum sourced wastes in the seas and oceans has been noticed (TR Ministry of Transport and Infrastructure, 2020). In 1973, IMO adopted the “International Convention for the Prevention of Pollution from Ships”, now known universally as MARPOL, which has been amended by the Protocols of 1978 and 1997 and kept updated with relevant amendments. The MARPOL Convention addresses pollution from ships by oil; by noxious liquid substances carried in bulk; harmful substances carried by sea in packaged form; sewage, garbage; and the prevention of air pollution from ships. MARPOL has greatly contributed to a significant decrease in pollution from international shipping and has been used by 99% of the world’s merchant tonnage (IMO, 2020a).

IMO is continuously pursuing a pro-active approach to enhance implementation and enforcement, both by flag and port States, including a pro-active action plan to ensure that shore-based reception facilities for ship generated waste keep up with international regulatory requirements (IMO, 2020b). The MARPOL contract is reserved for annexes, as it is a contract to prevent all kinds of pollution in the seas. These annexes include all types of pollution seas are exposed to. MARPOL convention address anti-fouling systems used on ships, the transfer of alien species by ships ballast water and the environmentally sound recycling of ships. Overall, the pollution that ends up in the seas and oceans, originates from four distinct sources. As represented in the chart below (Figure 1), the major part of all pollution comes from the land, either through run-off and discharges (via

waterways; 44%) or through the atmosphere (33%). Only 12% of all pollution is due to maritime activity and shipping accidents. Dumping of garbage and sewage, as well as the consequences of offshore drilling and mining make up for the rest (Potters, 2013). Depending on the ship's design and function, bilge water may contain water, oil, urine, detergents, solvents, chemicals, pitch, particles, and other materials. Cleaning out the bilge tank is therefore bound to release a quantity of pollutants. Customarily, there is a distinction between engine bilge and all the other forms of bilge water. Again, the IMO has imposed a number of strict rules to limit the impact of the shipping sector on the marine environment. In this case, no water exceeding 15 parts per million (ppm) of oil can be discharged overboard (Potters, 2013).



**Figure 1.** Share of the Different Sources of Pollution into the Marine Environment (Potters, 2013).

Cyprus is the third largest island in the Mediterranean Sea, situated 55 nautical miles west of Syria and 33 nautical miles south of Turkey. Its dimensions are roughly 225 km from east to west and at most 97 km from north to south with a coastline of 350 nautical miles. It is compact in shape except for a long, tapering peninsula to the northeast (METU, 2013). Cyprus is inside the climate zone called 'semi- arid' according to macroclassification. Mediterranean Climate is observed, where the summer season is hot and dry, and the winter season is warm and with low precipitation (TRNC Meteorology Department, 2020). According to the latest census, the population of TRNC has been determined to be 375.000 people (TRNC Ministry of Interior, 2019). The number of citizens working in the maritime sector is at an ideal level which is an indication that maritime sector is developing. Even though there are professional fishers on the island, the majority of them have amateur activities (TRNC Directorate of Ports Department, 2020).

Since the public awareness and sensitivity is high in the island of Cyprus, garbage or household waste materials are not discharged from the coasts or restaurants near the sea. The marine pollution seen in the ports and beaches of the island of Cyprus is not due to the negligence of people, but from the negligence of the government and port operators.

This paper aims to determine a method to investigate the applicability of MARPOL rules on the ships operating from the northern ports of Cyprus; suggest actions to be applied in order to prevent the ports from being exposed to the pollution caused by the ships; and to pursue a more effective way to prevent marine pollution by sharing inter-institutional authorities. The methods and equipment used in this thesis have been carefully selected and applied to meet the needs and requirements of the port operators. In addition, it has been determined that there is no scientific study in this field before, therefore, this paper is intended to assist further future studies.

## **2. MATERIAL AND METHOD**

The law of MARPOL Convention was approved by the Turkish Republic of North Cyprus

Parliament in 2 November 1999 (TRNC Parliament, 1999). To determine the applicability rate of MARPOL rules, a questionnaire consisting of 9 questions was developed. This questionnaire, which was issued by summarizing the MARPOL convention, was applied to all ships operating in the ports and harbours on the northern coasts of Cyprus. The questions in the checklist consist of the most basic rules that the ships must follow, which are included in the law adopted by the TRNC Parliament. For this reason, it is inevitable that the applied method gives definite results.

There are a total of 7 ships registered in TRNC ports. 5 ships are in Famagusta Port and 2 ships are in Kyrenia Port. Beşparmak ship, which operates under the Filo Shipping company and has a weight of 4101 gross tons, is a cargo ship that makes Ro-Ro transportation between Mersin and Kyrenia. The Via Mare ship, which operates under the Akgünler Shipping company and has a weight of 8023 gross tons, is a passenger ship that performs Ro-Ro transportation between Mersin and Kyrenia. The Hazal ship, which operates under the shipping company Almeyda Shipping Ltd. and has a weight of 1585 gross tons, is a general cargo ship that transports dry cargo between Famagusta and Hatay. The Tango ship, which operates under the shipping company Almeyda Shipping Ltd. and has a weight of 1597 gross tons, is a general cargo ship that transports dry cargo between Famagusta and Hatay. The Via Famagusta ship, which operates under the Akgünler Shipping company and has a weight of 5197 gross tons, is a passenger ship that performs Ro-Ro transportation between Famagusta and Mersin. The Toros ship, which operates under the Filo Shipping company and has a weight of 2746 gross tons, is a cargo ship that makes Ro-Ro transportation between Famagusta and Japan. The Deep Karpaz ship, which operates under the Sun Link company and has a weight of 10030 gross tons, is a cargo ship that transports dry cargo between Famagusta and Mersin. All ships were visited and questionnaire was filled and consecutive results are quantified. Separation systems and general applications were also checked and finally the visit was completed. The questionnaire which consists of 9 questions, includes cargo ships and passengers ships. It does

not include oil tanker ships. The reason for this is that there is no registered oil tanker ship in the TRNC. By applying this questionnaire to ships, the applicability rate of MARPOL rules on the northern coast of Cyprus will be determined.

Descriptive statistics will be made using the percentages of these questions. Results will be obtained by evaluating these statistics. Analyzes will be made using these results. Keeping the oil record book specified in Question 1 is quoted from rule 20. The parts related to the bilge separator specified in questions 2 and 3 are included in rule 9. The alarm system in question 4 is quoted from rule 10. In the 5th question, the international outlet valve that should be on every ship is specified in rule 18. The parts related to the separation system specified in questions 6 and 7 are included in rule 9. The issues stated in the 8th and 9th questions are the applications requested from the ships by the TRNC Directorate of Ports Department. The nine yes-or-no questions (Q's) on the checklist corresponding to relevant MARPOL rules are listed below:

- Q1. Is the "Oil Record Book" filled in properly?
- Q2. Does the bilge-water in the ship goes through the separator before being discharged into the sea?
- Q3. Is the bilge-water separator designed to prevent the amount of petrol to exceed 15 ppm?
- Q4. Does the bilge-water separator have an alarm system that notifies when the amount of petrol exceeds 15 ppm?
- Q5. Does the ship have international outlet valve to transfer the sewage from ship to port waste reception facility?
- Q6. Does the ship have an approved separation system to discharge sewage when the ship is at least 4 nautical miles away from the nearest land?
- Q7. Is the sewage discharge being made at least

12 nautical miles away from the nearest land when an approved separation system cannot function properly? (Out of Territorial Waters)  
 Q8. Is the "The Waste Notification Form" fully filled and delivered to the Port Authority on every entrance?

Q9. Are all kinds of domestic and operational wastes (garbage) delivered to port operators when the ship is boarded to the port?

As a result of the application of this method, the applicability rate of MARPOL rules will be determined. If the applicability is low, port waste reception facilities will be used as material. It is determined that the use of port waste reception facilities will benefit both the national economy and the marine environment.

### 3. RESULTS

The conclusions drawn from asking the questions in the checklist covering the rules of the MARPOL Convention law approved by the TRNC Parliament are presented in this section. All 7 ships on the northern ports were visited, as two ships from the Port of Kyrenia and 5 ships from the Port of Famagusta.

Results indicate that more than half of the MARPOL Rules are applied. Detailed statistics of the results are shown in Tables 1-3. Questions on the checklist were asked to all cargo and passenger ships registered in the TRNC ports. The results were based on scientific data and exact statistics were reached. The questions asked to the staff working on the ships are mentioned in detail and all the information received from the ships is mentioned. Separation systems were checked and the records kept were examined.

**Table 1.** Results of the Questionnaire

Ship Name	Response								
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9
Besparmak	Y	Y	Y	Y	Y	Y	Y	Y	Y
Via Mare	Y	N	N	N	Y	N	Y	Y	N
Hazal	Y	Y	Y	Y	Y	Y	Y	N	N
Tango	Y	N	N	N	Y	Y	Y	N	N
Via Famagusta	Y	Y	Y	Y	Y	N	Y	N	N
Toros	Y	Y	Y	Y	Y	Y	Y	N	N
Deep Karpaz	Y	N	N	N	Y	Y	Y	N	N

Results revealed that variable actions were practiced by the ships. Oil Record Book is kept on all visited ships. Bilge separator works effectively used in 4 ships and it is out of order in three ships. 5 of the visited ships have an approved separation system for sewage discharge, other two ships had a defective system. All ships had an international outlet valve. Famagusta port does not request a waste notification form from ships in the port, therefore, the ships do not fill this form. In addition, ships in the Famagusta port dump their garbage in port containers without keeping records.

MARPOL rules are not completely applied on the northern coasts of Cyprus in accordance with the laws of the TRNC Parliament. As a result of the researches, it has been determined that the applicability of these rules is not even controlled. The captains of the ships visited stated that the lack of port state control in the TRNC ports is a major factor in marine pollution. Ship captains stated that they were inspected in detail by the port state in every port they went to. However, they stated that they were never controlled by the port state in the TRNC ports and that they did not even see port state control in the TRNC ports. During the study, it was revealed that the Directorate of Ports Department lacks such a unit. Questions 1, 5 and 7 are applied by all ships as they cover the basic level of MARPOL rules. Although questions 2, 3, 4 and 6 are rules to be followed by all ships, they are not controlled by the port state, so their applicability rate is low. Question number 8 is applied to ships registered at the port of Kyrenia and not applied to ships registered at the port of Famagusta. Therefore, its percentage is low. Question number 9 is the question with the lowest applicability rate. The reason for this is that the port operators in Cyprus do not receive the waste from the ships. Questions with an applicability percentage below 50% arise from the failure of the TRNC country to fulfill its duty. In accordance with the 12th rule of the MARPOL convention, it is obligatory to have port waste reception facilities in the ports of the contracting countries. For this reason, the applicability percentage of the 8th and 9th questions is extremely low.

As represented in the chart below (Figure 2), the frequency of the ships answers to the questions is shown. According to this chart, questions 1, 5 and 7 are the questions with the most "yes" answers. Questions number 8 and 9 are the questions with the most "no" answers. Detailed information on the percentages of these questions is presented in Table 3.

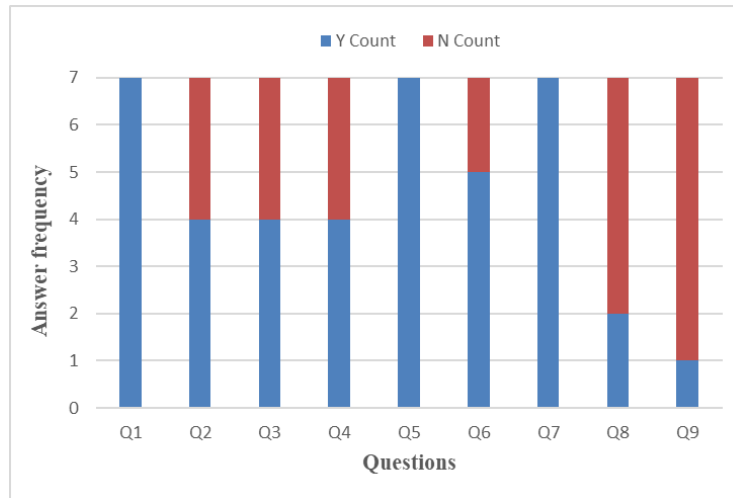
Another aim in the visits is to compare MARPOL applications in TRNC ports and MARPOL applications in countries with a clean marine environment. This comparison can be made because the ships visited are also ships that travel to different countries. The results to be drawn from this comparison will be applied to the TRNC ports, ensuring that the MARPOL contract is a more viable contract internationally on the northern shores of Cyprus.

**Table 2.** Percentages of MARPOL Rules Applied by Ships.

Ship Name	MARPOL Rules Applied (%)
Besparmak	100
Via Mare	45
Hazal	78
Tango	45
Via Famagusta	67
Toros	78
Deep Karpaz	45

**Table 3.** Percentages of Questions Applied by Ships.

Question Number	Applicability of Questions (%)
1	100
2	58
3	58
4	58
5	100
6	72
7	100
8	29
9	15



**Figure 2.** Response Frequency Chart

#### **4. DISCUSSION**

Marine pollution produces numerous obvious biological effects, including diseases in plant and animal species, local or complete extinction of some species, changes in community structure, loss or modification of habitat, and human health complications. Therefore, it is necessary to make sustainable conventions for the prevention and elimination of marine pollution (Parker, 2020). The EU Commission (2000) set out the specific requirement that all EU ports provide reception facilities for vessels normally using that port, these facilities covering a wide range of ship-generated waste including oily waste, chemical waste, sewage and garbage. All wastes generated on board vessels visiting those ports were to be discharged into reception facilities, unless vessels had sufficient capacity on board to travel to their next port of call, with a system of vessel documentation and inspections to ensure that vessels were capable of reaching that next port without the need to discharge waste illegally at sea. The Directive also includes a requirement for advance notification by vessels to ports of their intention to use facilities, a fee system to encourage use of facilities and a system to monitor compliance by vessels and the provision of adequate sanctions for non-compliance (Carpenter and Macgill, 2005).

In TRNC Environmental Law, it has been determined that crimes such as discharging from ship to territorial waters, deliberate discharge of bilge and ballast water to territorial waters are higher than the fines and prison sentences of other crimes in the law. However, it should be stated that TRNC is an island country, and the seas are unquestionably important, and that a mistake will cause great damage to this country in the future. For this reason, it is determined that the amount of fines specified is higher than other crimes in the law. However, the fines are not enough when it comes to the future of the country and the cleanliness of the seas. Under the Environment Law, if an oil ship be stranded and spilled oil into the sea in the territorial water of the TRNC, the ship's captain can be fined up to 25 times the monthly minimum wage or up to 10 years in prison. As of 01.02.2020, if we calculate the minimum wage (monthly net minimum wage is

3,323₺ in 2020), the fine to be paid by the individual or the company is 83,075₺ (TRNC Ministry of Labor and Social Security, 2020). In return for this money to be paid to the TRNC state, the oil, which will have a major contribution to marine pollution, will be cleaned from the sea and will be effecting the marine environment in the future.

According to the Environmental law of TRNC, the damage to the environment by companies or individuals will be returned as a fine or imprisonment. However, in some cases, the person committing the crime is given 30 days to clear the pollution in question or compensate for the damage caused in the environment. If this pollution or damage is not corrected during this period, a notice will be issued to the person or company who committed the crime and fines that are not paid within 15 days are doubled. In such case, it is foreseen that it would be risky to give 30 days to the perpetrator of the crime, and the pollution may spread to a large area if it cannot clear the pollution in question. Considering the costs in the ever-changing world economy and maritime sector, it is considered that 83,075₺ is not even close to be sufficient in such a case, it will be necessary to budget at least more than 100,000₺ to only clean the oil from the sea and the government will suffer financially from this incident. Therefore, in order to increase the fines in crimes to be committed in marine pollution and for the fines to be payed as soon as possible, deterrent articles should be added in to the law. The most effective sanction held by the Ministry of Environment is the authority to prepare a law amendment and submit it to the Council of Ministers in line with the suggestions to be given by the Coast Guard Command and the Directorate of Ports Department. The Ministry has the authority to include all the rules it deems necessary to protect the coastal strips and territorial waters from marine pollution. For this reason, a special delegation should be created by the ministry, and reasonable fines should be determined for the persons and companies that cause marine pollution as a result of their research. Fines should be determined by taking into account the material damage that the state will suffer as well as the cleanliness of the seas and submitted to the council of ministers. The



delegation to be formed should be formed from people who have raised themselves on marine pollution and have the necessary knowledge in this regard. This delegation will be responsible for all ports of the TRNC supervising the practices and activities of the port operators, and should report to the Ministry of Environment to which it is affiliated. Therefore, it is necessary to determine the powers of the delegation in the law. Because this delegation should have the authority to request the investigation of the pollution rate by taking samples from the sea water of any port. With the establishment of the port waste reception facility, all ships will be able to discharge any liquid waste from the pier to the port waste reception facilities. Thus, waste liquids can be collected in bulk and transferred to recycling facilities. While this will contribute to the economy of the TRNC state, it will also prevent environmental pollution.

## 5. CONCLUSIONS

Commercial transportation has an important role among the factors causing marine pollution. Ballast waters, bilge waters and solid wastes from the ships are unwanted discharges into the environment, causing environmental pollution. The law of MARPOL Convention was approved by the TRNC Assembly, came into force on 2 November 1999. In this law, the executive authority has been given to the Ministry of Transport (TRNC Law, 1999). Although the maritime transportation in TRNC has increased since the law came into force, it has been determined that no work has been done by the ministry regarding the implementation of the requirements of the MARPOL Convention (TRNC Court of Accounts, 2015). No innovations or changes have been made in the ports since the law came into force. When it was compared the conditions of 1999 with today's conditions, the fact that no innovations were made in the ports for the developing maritime transport and maritime trade caused an increase in the pollution rate in the seas. In addition, it has been determined that failure to carry out inspections to prevent marine pollution from ships is a major factor (TRNC Court of Accounts, 2015). When all these issues are evaluated, it has been

determined that the ships and boats in the ports act careless due to the absence of an administration that regularly monitors and controls. Therefore, it was found that the boat and ship owners were desperate because of the lack of waste reception facilities in the ports and therefore they had to discharge the wastewater on the ship into the port or the coast. In order to meet the requirements of the MARPOL Convention, it is necessary to carry out project studies for the regulation of ports by the authorized institutions. It is important that the government supports and allocates a budget for the projects that will be prepared by the Ministry of Transport. It has been determined that ship accidents or environmental disasters that will be experienced in case of delaying the project works can cause great damage to the coasts of the TRNC. For this reason, it is important to start the activities without delaying the works and rearrange the ports. If the inter-institutional authorities are determined clearly, the island of Cyprus will have much cleaner coasts in the future, with the necessary measures being taken. In addition to increasing the measures, good results will be achieved with the implementation of sanctions.

## AUTHORSHIP STATEMENT

**Eyüpcan ARSLAN:** Conceptualization, Methodology, Validation, Formal Analysis, Resources, Writing - Original Draft, Writing-Review and Editing, Data Curation, Investigation, Software, Visualization, Supervision, Project administration, Funding acquisition.

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## CONFLICT OF INTERESTS

The author(s) declare that for this article they have no actual, potential or perceived conflict of interests.

## ETHICS COMMITTEE PERMISSION

Author(s) declare that this study was conducted in accordance with ethics committee procedures of human or animal experiments.

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## 6. REFERENCES

- Carpenter, A., Macgill, S. (2005).** The EU Directive on port reception facilities for ship-generated waste and cargo residues: The results of a second survey on the provision and uptake of facilities in North Sea Ports. *University of Leeds*, 50 (12). pp. 1541-1547. ISSN 0025-326X.
- Dwarakish, G. (2015).** *Coastal Pollution: A review.* Elsevier.
- IAEA, (2019).** Retrieved from International Atomic Energy Agency WebSite, <https://www.iaea.org/topics/marine>
- IMO, (2020a).** Retrieved from International Maritime Organization, <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Pages/Default.aspx>
- IMO, (2020b).** Retrieved from International Maritime Organization, <http://www.imo.org/en/OurWork/Environment/PollutionPrevention/Pages/Default.aspx>
- METU, (2013).** Retrieved from Middle East Technical University WebSite, <http://users.metu.edu.tr/birten/adacogr.html>
- Parker, W.C. (2020).** *Effects of Marine Pollution on Benthic Foraminifera.*
- Potters, D.G. (2013).** *Marine Pollution* 1st Edition. Oxford University Press, pp.5, ISBN 978-87-403-0540-1.
- TR Ministry of Transport and Infrastructure, (2020).** Retrieved from TR Ministry of Transport and Infrastructure Web Site, <https://imo.uab.gov.tr/marpol-73-78>
- TRNC Court of Accounts, (2015).** Report of the Court of Accounts of the accident that occurred in the TRNC Akşa Energy.
- TRNC Directorate of Ports Department, (2020).** Personal Communication.
- TRNC Law, (1999).** Retrieved from TRNC Law Web Site, <https://mahkemeler.net/cgi-bin/elektroks.aspx>
- TRNC Meteorology Department, (2020).** Retrieved from TRNC Meteorology Department Web Site, <http://kktcmeteor.org/meteorolojikbilgi/kibris-iklimi#>
- TRNC Ministry of Interior, (2019).** Retrieved from TRNC Ministry of Interior Web Site, <https://www.gundemkibris.com/kibris/baybars-kktc-nufusu-374-bin-299-h271790.html>
- TRNC Ministry of Labor and Social Security, (2020).** Retrieved from TRNC Ministry of Labor and Social Security WebSite, <https://csgb.gov.ct.tr/ASGAR%C4%B0-%C3%9CCRET>
- TRNC Parliament, (1999).** Retrieved from TRNC Parliament WebSite, <http://evrak.cm.gov.nc.tr/siteler/belgeler/Yasalar/Shar ed Documents/1999/60-1999.DOC>
- UN, (2018).** Retrieved from United Nations Web Site, [https://www.un.org/depts/los/convention\\_agreements/exts/unclos/part1.htm](https://www.un.org/depts/los/convention_agreements/exts/unclos/part1.htm)
- United Nations, (2020).** International Convention for the Prevention of Pollution of the Sea by Oil, 1954. Treaty Series.