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Contamination Of Bourgas Port Waters With Oil

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Accurate prediction of the behavior of oil pollution is crucial for successful decision making and planning of operations to combat pollution of the coastal zone to protect the environment. In addition, the oil spills in the Bourgas Bay of West Black Sea may cause extra contamination of port waters in different terminals of port of Bourgas with oil and liquid dangerous products which is extremely undesirable from the environmental point of view and forthcoming certification of Port of Bourgas. The present study aims to assess the impact of the risk of oil spills in the auguatory of Bourgas Port and to determine potentially dangerous areas of contamination in the inner basins of the port and the conditions for their occurrence. The numerical model MOTHY, developed by Météo-France, have been used to predict the drift of pollutants on the sea surface. The atmospheric conditions are provided by wind and sea level pressure forecasts from limited area model ALADIN weather. Numerical simulations are carried out in the Bourgas bay and harbor waters for 20 locations of potential and real oil spill accidents. The range of hypothetical scenarios includes various winds and current conditions. Finally, the simulation results indicate the places with a high risk of oil pollution in the port of Bourgas. The proposed methodology utilized in this study is applicable to risk assessments for other ports and coastal areas potentially affected by floating pollutants. This research was made possible thanks to a research grant provided by South East Europe Transnational Cooperation Program within Transnational enhancement of ECOPORT 8 network - TEN ECOPORT project Code SEE/D/189/2.2/X. Keywords: marine pollution, oil spill, numerical simulations, Black Sea,