

## A SURVEY OF MARINE AND AQUATIC OIL SPILLS IN THE PHILIPPINES FROM 1975-1997

TALORETE, T. P.N.

Center for BioMolecular Science Foundation  
c/o Marine Science Institute  
UP Diliman, Quezon City,  
Philippines

The Philippines' dependence on shipping for the conveyance of people and commodities has made it the top cause of oil spill incidents in the Philippines from 1975 to 1997. Of the 116 recorded spills during this period, 70% were ship-related; 20% occurred in refineries and depots; 7% were factory-related; and only 3% were due to undetermined causes (Fig. 1).

Fig. 2 shows the yearly frequency of oil spill accidents during this period. The year 1978 experienced the most number of accidents with a total of 5 million liters of different types of spilled oil (Fig. 3). The year 1986 had only six oil spill incidents but the volume of spilt oil reached 3.3 million liters. Hardest hit was Negros Occidental with 2.2 million liters of bunker oil emptying into the marine environment. This was the worst recorded oil spill in the country's history.

Fig. 4 shows the ecosystems affected by oil spills from 1975 to 1997. As much as 66% occurred in the marine environment, primarily due to shipping and ship-related incidents, as mentioned earlier. In this context, heavy oil or bunker fuel figured in 40% of the total spilled oil in the given period (Fig. 5). Fuel oil follows at 18%.

Fig. 6 shows that marine oil spills are caused by three related events: sinking (36%), grounding of vessels (18%) as well as both collision and sinking of vessels (10%). Other spills occurred during the transfer of oil from ships to depots or storage tanks via pipelines.

The presence of refineries and depots in Batangas and Bataan makes these areas prone to oil spills (Fig. 7). As much as 15% and 9% of oil spills occurred in Batangas and Bataan, respectively, from 1975 to 1997. In terms of volume (Fig. 8), as much as 2.8 million liters were spilled in Bataan compared to Batangas with only 0.8 million liters. Surprisingly, Pasig River and Manila Bay had almost similar number of incidents, 6%, and 5%, respectively, and volumes of spilt oil at both 0.25 million liters in the given period. However, this does not take into account the daily-undocumented spills in small volumes because of the heavy shipping traffic in the area.

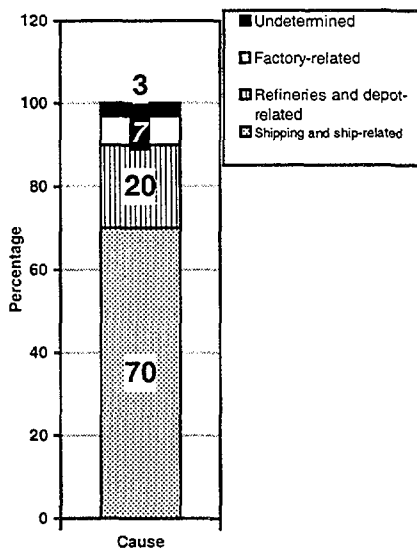


FIG. 1. General causes of oil spills from 1975 to 1997

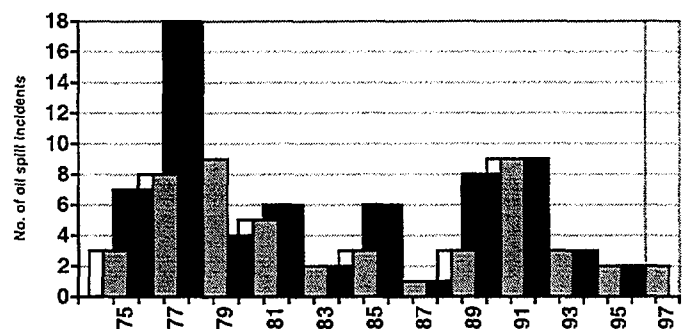


FIG. 2. Frequency of oil spills from 1975 to 1997.

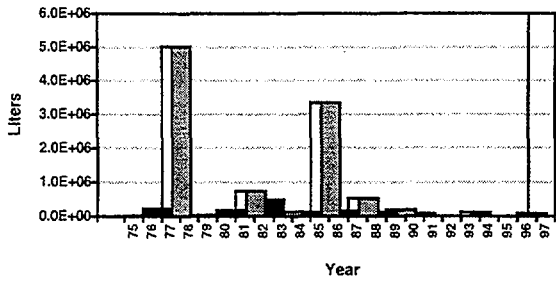


FIG. 3. Volume of oil spilled per year from 1975 to 1997

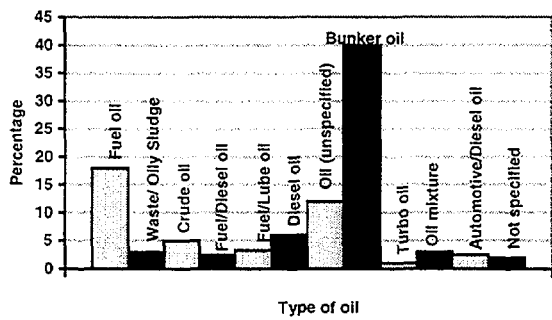


Fig. 5. Types of oil spilled from 1975 to 1997.

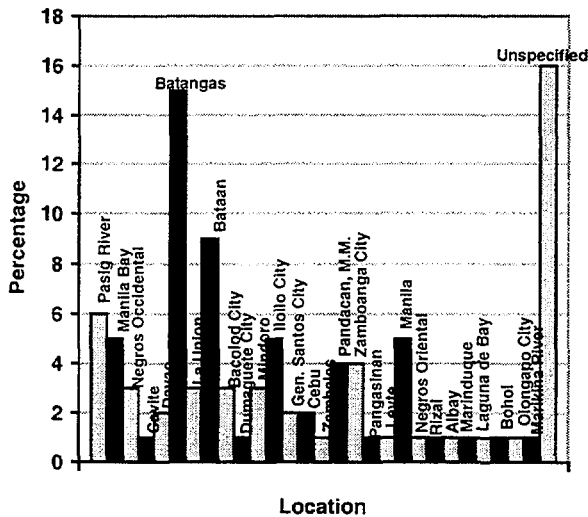


FIG. 7. Location of oil spills from 1975 to 1997.

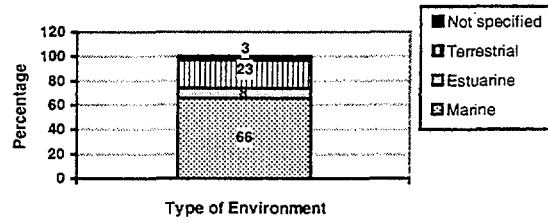


FIG. 4. Oil spill-affected environments from 1975-1997.

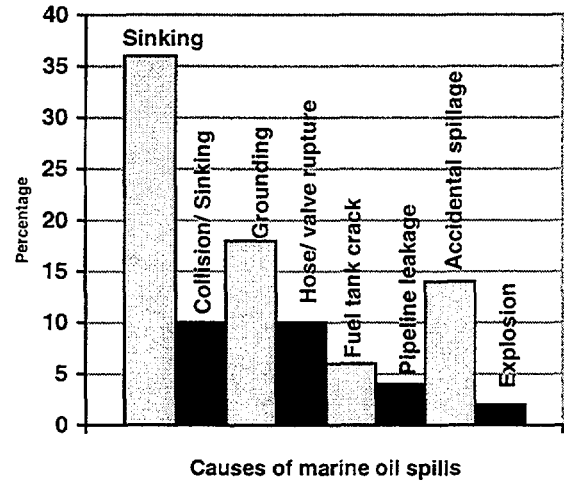


FIG. 6. Causes of marine oil spills from 1975 to 1997.

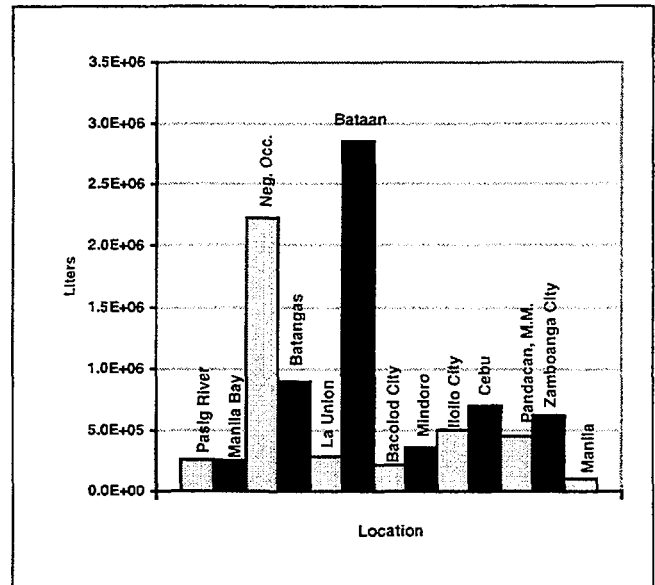


FIG. 8. Volume of oil spilled in major locations from 1975 to 1997.