建立海岸油污染適當清理之決策支援程序

Trinh Hoang Long、陳宜清

E-mail: 9805417@mail.dyu.edu.tw

摘 要

溢油污染經常造成嚴重及長期的生態、經濟、政治、文化及社會等層面的衝擊。吾等雖不能確定地預測上述之衝擊何時發生?然而吾等卻可以事前先演練及評估當某等程度之油污對脆弱海岸的衝擊情形。其中，可利用環境敏感指標之方法來評價。本研究將建置一套模式，稱為「越南油污管理輔助系統」(VOAM)，其主體為結合地理資訊之決策支援系統，並運用Borland Delphi 2005之程式語言撰寫。這套模式可提供非技術官僚之決策者在最短時間內獲得最合適之清理方法的建議，並能有效預防或減低油污對海岸之衝擊。為評價油污對生態之影響，環境敏感指標地圖將被應用及確認已經調查之敏感生態系及人類相關活動情況。環境敏感指標地圖也與VOAM模式相結合。運用VOAM模式，甚至一些非技術性人員也能簡單應對油污對海岸之衝擊。

關鍵詞 : 溢油污染、決策支援系統、環境敏感指標地圖、Borland Delphi 2005程式語言、油污清理。

目錄

參考文獻

1.American Petroleum Institute (API), National Oceanic and Atmospheric Administration (NOAA), U.S. Coast Guard (USCG) and U.S. Envirionmental Protection Agency (USEPA) (2001). Characteristics of Response Strategies: A Guide for Spill Response Planning in Marine Environments. Seattle, WA: NOAA National Ocean Service. 2.Jensen C. (2004). Borland Delphi 2005 Reviewer ' s Guide. Produced for Borland by Jensen Data Systems, Inc., Scotts Valley, CA: Borland Software Corporation. 3.Chen, Y. C. (2007). Application of DSS and ESI maps for Cleanups in Coastal Oil-spills. The 4th International Conference on Environmental Disaster and Emergency Response Conference, 2007, National Yunlin University of Science and Technology (NYUST), Touliou, Yunlin, Taiwan. 4.Chen, Y. C. and O ' Yang, L. J. (2006). The application of ESI maps with GIS technique to coastal oil-spill cleanups in Taiwan. Environmental Problems in Coastal Regions VI - Including Oil and Chemical Spill Studies: 33-43, Coastal Environment 2006 Conference, Rhodes, Greece. 5.Doerffer, J.W. (1992). Oil Spill Response in the Marine Environment. NY: Pergamon Press. 6.Exxon Production Research Company (1999). Exxon General Oil Response Plan. Chad-Cameroon Pipeline Project, Exxon Chad Development Project. Houston, TX: Exxon. 7.Fingas, M. (2001). The Basics of Oil Spill Cleanup. 2nd ed., Boca Raton, FL: Lewis Publishers. 8.Graham, G. (2003). Expert Systems for Marine Oil Spill Response Operations. Georgia Basin/Puget Sound Research Conference Proceedings, Vancouver, B.C. 9.Huynh, N.D., D.D. Manh, and N.Q. Huy (2007). Oil Spill Incidents in Vietnam. International Workshop on Exchanging Experiences in Discovery, and Emergency Response for Oil Spill on Sea, 2007, Hanoi, Vietnam. 10.National Oceanic and Atmospheric Administration (NOAA) (2000). Characteristic Coastal Habitats - Choosing Spill Response Alternatives. Seattle, WA: NOAA. 11.National Oceanic and Atmospheric Administration (NOAA) (2002). Environmental Sensitivity Index Guidelines. NOAA Technical Memorandum NOS OR&R 11, Seattle, WA: NOAA. 12.Nordvik, A.B (1999). Time window-of-opportunity strategies for oil spill planning and response. Pure Appl. Chem., 71(1): p.5-16. 13.Pourvakhshouri, S.Z. and B.M. Shattri (2003). Decision support system in oil spill management. Journal of Disaster Prevention and Management (literature review). 12 (3): p.217-221. 14.Pourvakhshouri, S. Z., Shattri, B. M., Zelina, Z. I., and A. Noordin (2006). Decision support system in oil spill management. International Archives of Photogrammetry, Remote Sensing, and Spatial Information Sciences Vol. XXXVI - Part 2: 93-96, ISPRS Technical Commission II Symposium, Vienna. 15.Raiffa, H. with J. Richardson and D. Metcalfe (2003). Negotiation Analysis: The Art and Science of Collaborative Decision Making, Cambridge: Belknap Press. 16.Slap, A.J., D. Hillman, and D. Moore (2002). Expert Systems in Emergency Response. 2002: The EIIP Virtual Forum. (assess: http://www.emforum.org/varena/er2.htm) 17.The International Tanker Owners Pollution Federation Limited (ITOPF)(2000a). Country Profiles: A Summary of Oil Spill Response Arrangements & Resources Worldwide - Taiwan – R.O.C. London, UK: ITOPF. (access: http://www.itopf.com/_assets/country/taiwan.pdf) 18.The International Tanker Owners Pollution Federation Limited (ITOPF) (2000b). Country Profiles: A Summary of Oil Spill Response Arrangements & Resources Worldwide - United Kingdom. London, UK: ITOPF. (access: http://www.itopf.com/_assets/country/uk.pdf) 19.The International Tanker Owners Pollution Federation Limited (ITOPF) (2000c). Country Profiles: A Summary of Oil Spill Response Arrangements & Resources Worldwide - Vietnam. London, UK: ITOPF. (access: http://www.itopf.com/_assets/country/vietnam.pdf) 20.The International Tanker Owners Pollution Federation Limited (ITOPF) (2008). Fate of Marine Oil Spills. Technical Information Papers No.11. London, UK: ITOPF. 21.The International Tanker Owners Pollution Federation Limited (ITOPF) (2009a). Country Profiles: A Summary of Oil Spill Response Arrangements & Resources Worldwide- Australia. London, UK: ITOPF. (access: http://www.itopf.com/_assets/country/australi.pdf) 22.The International Tanker Owners Pollution Federation Limited (ITOPF) (2009b). Country Profiles: A Summary of Oil Spill Response Arrangements & Resources Worldwide- United State of America. London, UK: ITOPF. (access: http://www.itopf.com/_assets/country/usa.pdf) 23.The Marine Hydro-meteorological Center (MHC) (1996). The Final Report of Vietnam Vulnerably Assessment Study. Hanoi, Vietnam: MHC. 24.The Prime Minister of Vietnam (2001). Decision No. 129/2001/QD-TTg ratifying the national plan on coping with oil spill incidents in the 2001-2010 period, approved by The Prime Minister of Vietnam, August 29, 2001. (access: http://www.asianlii.org/vn/legis/laws/rtnpocwosiit20012010p684/) 25.The Prime Minister of Vietnam (2005). Decision No. 103/2005/QD-TTg promulgating the Regulation on oil spill response, approved by The Prime Minister of Vietnam, May 12, 2005. Vietnam Official Gazette No. 18: pp. 27-33, May 2005, Vietnam. 26.Trinh. H. L. and Chen Y.C. (2008). A Decision Support Procedure for Proper Cleanups of Coastal Oil-Spill Applied in Vietnam. Proceeding of the 30th Ocean Engineering Conference in Taiwan, National Chiao Tung University, November 2008, Taiwan. 27.Turban, E. and Aronson, J. E. (2001). Decision Support Systems and Intelligent Systems. 6th ed., Boston, Prentice Hall Publisher.