中国农业科技导报 2008, 10(1) 93-97 DOI: ISSN: 1008-0864 CN: CN 11-3900/S

研究报告

海洋溢油事故对天然渔业资源损害评估

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摘要:

2006年4月22日舟山沿岸渔场的韩国籍现代独立轮发生溢油事故,根据溢油区域的油类、天然渔业资源的现状监测结果,溢油油品对海洋生物的急性毒性试验结果,结合历史资料提出海洋溢油污染事故对天然渔业资源损害评估的指标和方法。从生物资源增殖的角度,评估渔业资源恢复所需的费用。监测与评估结果表明,溢油事故海域表层水体中油类含量分布范围为0.365-984.400 mg·L^-1,平均含量151.478mg·L^-1,该油品对海蜇水螅体的24h-LC50值为3.5 mg·L^-1,对牙鲆仔鱼的24h-LC50值为2.0 mg·L^-1。溢油扩散范围达300 km^2（≥0.3 mg·L^-1）以上,其中造成天然渔业资源受到严重影响的海域范围达100 km^2（≥5.0 mg·L^-1）以上。该油污染事故造成鱼卵和仔鱼的总损失量分别为6.7×10^7个和1.17×20^9尾,鱼、虾和蟹类幼体总损失量分别为515354102尾、2386250520尾和56801322尾,潮间带底栖动物总损失量为81622968个。该溢油事故海域的渔业资源恢复所需总费用估算为2 569万元。

关键词： 海洋 溢油事故 天然渔业资源 影响评估

Damage Assessment of Marine Spilling Oil Accident |on the Natural Fishery Resources

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Abstract:

The impact assessment index and method of marine spilling oil accident on the natural fishery resources are approached taking the accident which occurred in the coastal fishing ground of Zhoushan in April 22 of 2006 for the " HYUNDAIINDEPENDENCE " ship of South korea as example, based on monitoring results of oil and natural fishery resources for the influence area of spilled oil, acute toxicity experiment result of spilled oil on marine organism, combined with relative historical data. The recovery cost of natural fishery resources is assessed from living resource enhencing view. The monitoring and assessing results express that the distributional range of oil concentration is between 0. 365 and 984.400 mg·L^-1 and mean is 151.478 mg·L^-1 , the 24 h-LC50 of spilled oilis 3.5 mg·L^-1 for jellyfish larva and 2.0 mg·L^-1 for Paralichthy olovaceus larva. The spreading range is over 300 km^2 （ ≥0.3 mg·L^-1 ） and the area in witch natural fishery resources is seriously influenced is over 100 km^2 （ ≥5.0 mg·L^-1 ）. The total damaged number resulted by the pilling oil accident are 6.7 × 10^7 individuals for fish egg, 1.17 × 10^9 individuals for fishlarva, 515 354 102 individuals for young fish, 2 386 250 520 individuals for young shrimp, 56 801 322 individuals for young cramb and 81 622 968 individuals for benthos of tidal zone repectivly. The total cost will be about 25 690 thousands yuan for the recovery of natural fishery resources in the spilling oil accident area.

Keywords: marine oil spilling accident natural fishery resources impact assessment

收稿日期 2007-10-29 修回日期 2007-12-27 网络版发布日期

DOI:

基金项目:

国家科技支撑计划（2006BAC11B3）资助.

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