Environmental & Resource Economics (2005) 30: 93–114 

# Post OPA-90 Vessel Oil Transfer Spill Prevention: The Effectiveness of Coast Guard Enforcement

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Accepted 16 June 2004

**Abstract.** Although oil spills from tanker accidents receive the most publicity, most vessel spills are not the result of accidents but of oil transfer activities. We investigate determinants of the size of vessel oil transfer spills as well as the effectiveness of Coast Guard enforcement activities in reducing their size. Vessel out-of-water and in-water oil transfer spillage functions are estimated utilizing tobit regression and detailed data on individual vessel oil transfer spills as well as Coast Guard safety/environmental enforcement activity data for the 1991–1995 period. Our estimation results suggest that Coast Guard hull but not machinery inspections are effective in reducing both out-of-water and in-water spills; patrols by air, but not by boat, are effective in reducing out-of-water spills; but neither is effective in reducing in-water spills. The results also show that the type of vessel (oil- and non-oil-cargo), vessel characteristics, vessel operations, weather/visibility conditions, and waterway type are determinants of post OPA-90 vessel oil transfer spills.

**Key words:** oil spill, oil transfer, vessel, water pollution

**JEL classification:** Q25, K32, L92, L51

## 1. Introduction

In March 1989 the Exxon Valdez tank ship ran aground in Prince William Sound, Alaska, spilling nearly 37,000 tons of oil. This tanker accident spill ranks 34th in size among worldwide vessel oil spills on record, but it was the most expensive in oil spill history (White and Baker 1998). Exxon has paid $2.2 billion for clean-up, $1 billion to settle state and federal lawsuits, and $300 million for lost wages to 11,000 fishermen and business firms. The cost to the fisheries of south-central Alaska has been estimated to be $108.1 million, the largest component being a $65.4 million reduction in the pink salmon fishery in the first year following the accident (Cohen 1995). In 1994 an Alaska jury awarded an additional $5.3 billion in punitive and compensatory damages to those harmed by the Exxon Valdez oil spill. Exxon's appeal was rejected by an Alaska appeals court in March 2000. The Exxon