INTERPRETATION OF RESULTS CHAPTER 5

The compensation formula in the January 1994 proposed rule was based on an interpolation of 5,500 model runs. All results were calculated in mid-1991 U.S. dollars.

In general with increasing volume spilled, damages ($) increase while damages ($) per gallon spilled decrease. The damages are also very sensitive to oil type spilled. Heavier crudes and fuels remain as slicks for longer periods and, therefore, oil more wildlife than light distillates. However, the light distillates contain more toxic aromatic components that can injure more fish, shellfish, and their young-of-the-year, especially when wind entrains the oil in the water column and at higher temperatures.

The highest damages result in locations (cases) and seasons where biological abundances are highest, e.g., seagrass beds, mangrove swamps, and wetlands on the Pacific coast where birds concentrate (due to the scarcity of suitable habitat). West coast and Alaska damages are generally dominated by wildlife losses because of high relative abundances of these animals and low temperatures. California wildlife losses are relatively high both because of higher wildlife abundances and larger non-consumptive use values due to a larger population of people over which the values are aggregated.

It should be noted that the use of artificially large uniform habitats (such as wetlands) in running cases for the compensation formula may magnify the damages resulting from a spill at a given location over that which would be obtained from the NRDAM/CME, Version 2.4, run with default (mixed) habitats. The purpose of the compensation formula is to estimate damages if the entire volume spilled were retained in the selected habitat. Thus, the volume spilled in a given habitat should match as closely as possible that which occurred in reality. NOAA's January 1994 proposed OPA NRDA regulations allow damages for two sublots of the spill into two habitats to be used in calculating damages using the compensation formula.

The relationship between damages and volume spilled is a complex non-linear function which varies by case and conditions. This is because of the many non-linear algorithms in the model and the complexity of the environment for the model run (gridded habitat types, depths, etc.) Thus, the proposed compensation formula was derived by a linear interpolation of the model run results for a given case, season, and oil type.