

HISTOLOGICAL LESIONS FOUND IN SEVERAL MARINE MAMMALS COLLECTED FOLLOWING THE T/V EXXON VALDEZ OIL SPILL, MARCH 1989

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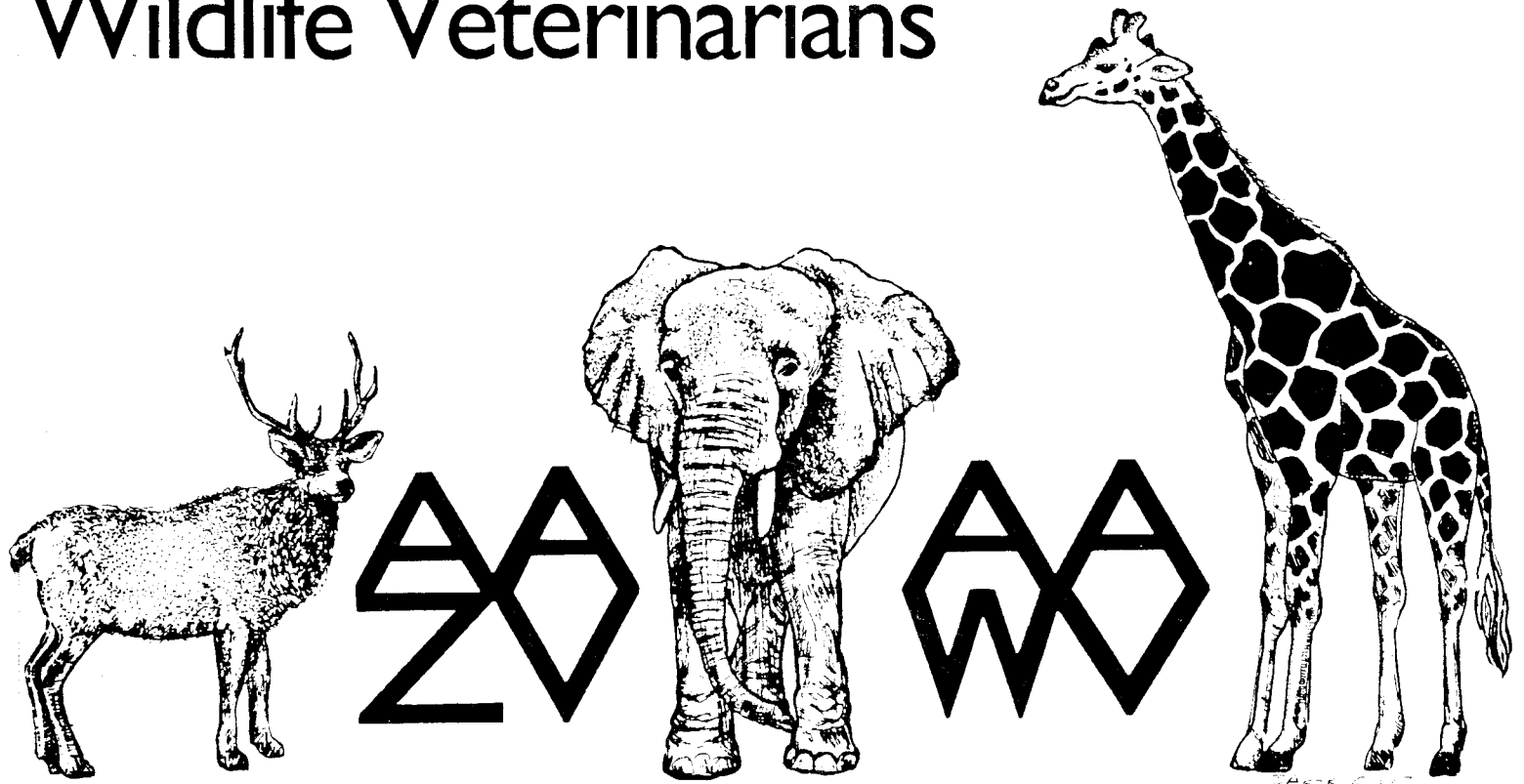
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At 12:04 a.m., 24 March 1989, the T/V Exxon Valdez ran aground on Bligh Reef and spilled approximately 11 million gallons of North Slope crude oil at the rate of 20,000 barrels per hour. Within a week, much of Prince William Sound, Alaska was markedly impacted by the crude oil. Animals affected were numerous and included sea otters, harbor seals, river otters, mink, marine birds, waterfowl, fish and numerous other types of aquatic life. Prince William Sound is a gulf approximately 30 x 70 miles in dimensions and has approximately 1,300 miles of shore line. Prince William Sound has an extremely rich wildlife fauna. The oil did cause relatively high mortality in sea otters. Approximately 8,000 to 12,000 sea otters inhabit the Sound and an estimated loss was 2,000 to 3,000, entirely on the western side of the Sound, occurred in these animals. Over 300,000 birds (including 200 species) inhabit the Sound, primarily in the winter, with approximately another 200,000 during the nesting season. No one will ever know the extent of mortality of these birds.

Following the oil spill, the Alaska Department of Fish and Game collected harbor seals, Steller sea lions, river otters, mink, bear, Sitka black-tailed deer and water fowl for the purpose of evaluating the toxicity of crude oil. The following animals were collected and examined: harbor seals (27), Steller sea lions (16), Sitka black-tailed deer (25), river otter (2), mink (2), bear (3), waterfowl (200). Numerous lesions, not associated with oil toxicity, were found in all of these animals. The majority of these unrelated lesions were associated with parasitic activity. Thus far, the primary lesions that were found associated with oil toxicity were found in harbor seals. Approximately 200 of 1,000 harbor seals are believed to have succumb to the toxic effect of oil. The primary lesions found in harbor seals included a neuronal necrosis, axonal degeneration and intramyelinic edema of the brain stem, especially within the thalamus, medulla oblongata and spinal cord. Renal and hepatic damage were not detected histologically or with serum chemistries in 25 animals. Lesions were not found in Steller sea lions or waterfowl that could be attributed to oil toxicity. The sample sizes for river otter, mink, Sitka black-tailed deer and bear were too small to reach any type of conclusion in regard to oil toxicity.

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