

Deer by Jon Lewis

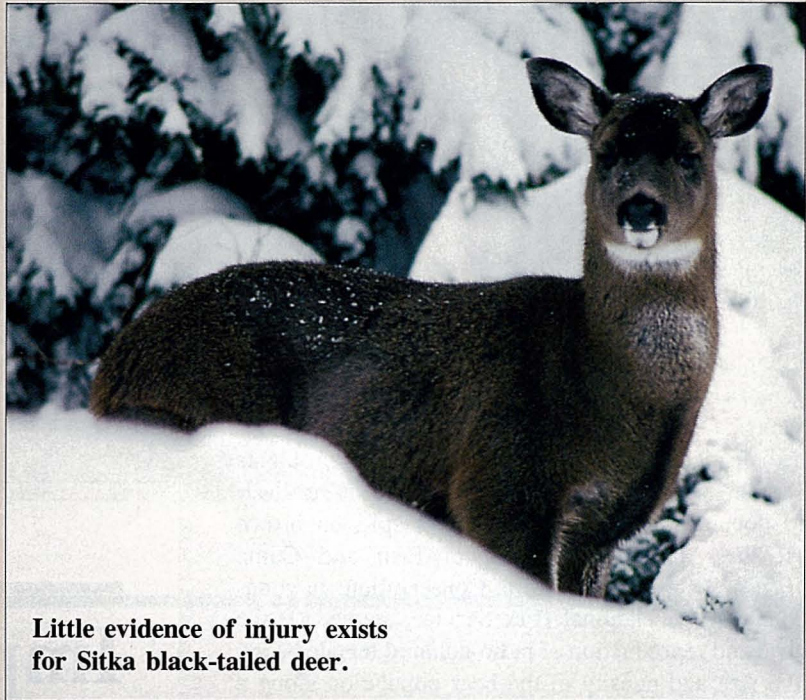
Sitka black-tailed deer are the most abundant large mammals in Prince William Sound and the Kodiak Archipelago. They live at or above timberline during the summer but move to beaches that are free from snow in winter. It is on these beaches that deer feed extensively on kelp and other marine flora to sustain themselves through the most critical part of their annual nutritional cycle. Many beaches used by deer were oiled during the *Exxon Valdez* oil spill.

Alaska Department of Fish and Game biologists documented the degree of oil ingestion and the concentrations that remained in deer tissues of 32 deer by analyzing tissue samples for petroleum hydrocarbons. They specifically selected deer on or near oiled beaches. One deer had elevated concentrations of aliphatic (nonvolatile or heavier) hydrocarbons but normal concentrations of aromatics (volatile or lighter) in liver samples. Muscle samples from that deer contained no hydrocarbons of either type that are indicative of exposure. Collectors noted no significant observations of oil ingestion, such as rumen aspirate in the lungs, during gross field necropsies.

Pathologists investigated physiological abnormalities by submitting tissues from 30 of the same 32 deer to histologic analysis. No oil-related lesions or pathologies were noted. Never was deer meat considered unsafe for human consumption.

Deer mortality was assessed during two searches of winter habitat. A pilot study located 38 dead deer, none of which was determined to have died because of oiling. Bone marrow characteristics indicated that starvation was the primary cause of mortality. It is possible that oiling or human disturbance could have led to increased starvation, however no documentation for this exists.

Biologists from Cordova conducted aerial surveys



Little evidence of injury exists for Sitka black-tailed deer.

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during the winter of 1989-1990. Deer were observed using oiled and unoled beaches similarly. Because deer were continuing to use oiled beaches, a second mortality survey of oiled beaches was conducted during the spring of 1990. Seven deer carcasses were located on the 19 Prince William Sound beaches (15.8 km) searched. Again, starvation seemed to be a major source of winter mortality. Three deer died of causes other than starvation, but obvious oil-related mortality was not observed.

While deer biologists and the public alike reported deer on oiled beaches and with oil on their bodies, almost no evidence of oil spill injury to the deer population exists. Had the oil spill occurred earlier in the year, the impact on deer might have been much more serious. But by late winter, deer had access to foods other than the marine vegetation on the beaches. They were able to move away from the beaches and the oil.

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The *Exxon Valdez* Oil Spill

What Have We Learned?



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