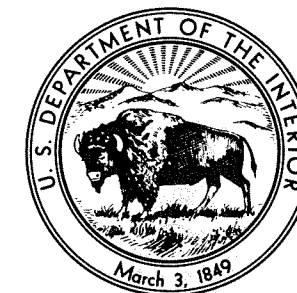


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HUMPBACK WHALES TO VESSEL TRAFFIC:
EXPERIMENTAL AND OPPORTUNISTIC
OBSERVATIONS**

Technical Report NPS -NR- TRS -89-01

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**United States Department of the Interior
National Park Service**



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ABSTRACT

The behavior of humpback whales summering in southeastern Alaska was observed in the presence and absence of vessel traffic. During the first study year (1981), small- and medium-sized vessels were directed to operate within 400 m of whales according to an experimental plan. The second study year (1982) concentrated on observations of whales during the opportunistic passby of medium and large vessels at distances generally greater than 400 m. Whales showed predictable behavioral responses to vessels operating at distances of less than 4,000 m. Changes in whale behavior were correlated with the speed, size, distance, and numbers of vessels within this proximity. Changes in the whales' respiratory behavior and orientation were the most sensitive indicators of vessel disturbance. Whales responded to the close proximity of vessels by decreasing blow intervals, increasing dive times, and moving away from the vessels' path. Changes in group composition, aerial behaviors, and surface-feeding behaviors were, in general, too infrequent to be a reliable measure of disturbance. At a high density of vessels, however, occurrences of aerial behaviors were inversely correlated with vessel distance. Detailed case histories indicated that the repeated approach or passby of vessels could result in the temporary displacement of whales from preferred feeding areas. Overall, our observations indicate that humpback whales exhibit a considerable degree of short-term changes in their behavior in response to vessel traffic.