

LIVE CAPTURE STATISTICS FOR THE KILLER WHALE (*ORCINUS ORCA*)
1961-1976 IN CALIFORNIA, WASHINGTON AND BRITISH COLUMBIA¹

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Abundance

Since the killer whale (*Orcinus orca*) is cosmopolitan in distribution, authoritative estimates are difficult to determine. Conservative estimates of world wide population are from 10-20,000 or more.

Local population (California, Washington, British Columbia) has been estimated from 300-600 or more individuals. Official observations revealed at least 459 killer whales in these Northwest fisheries waters in 1971, 255 in 1972 and 249 in 1973 (ANONYMOUS 1975). All of these counts were made on a one day, one count a year basis leaving many animals unaccounted for.

Analysis of 1972, 1973, 1974 and 1975 individual sightings of killer whales in the straits of San Juan de Fuca and Puget Sound ranged from one day, one count numbers of one to three individuals to as many as 400 animals (GOLDSBERRY 1972-1975). In addition, 1976 sightings include many one day, one count sightings of several groups of 30-100 animals as well.

Evidence thus far indicates no decrease in total numbers over the year, but does indicate a lessening of sightings of killer whales in populated areas probably due to increased boating and shipping as well as water pollution (EVANS 1976).

Statistics

BIGG and WOLMAN (1975) incorrectly reported the number of mortalities during live capture attempts in British Columbia from 1962 to 1973. They included an individual killer whale that entangled itself by attempting to swim through a gill net and drowned in July 1966, at Steveston, British Columbia. This was not an attempt at live capture, but an accidental drowning during a commercial salmon net fishery operation. Although it is not often reported, this type of accidental entanglement probably occurs each year during the commercial salmon net fishery.

They have also apparently incorrectly reported the number of mortalities during live capture attempts in Washington from 1962 to 1973. While they report the loss of two killer whales in Bellingham, Washington, in 1962, the collectors involved report the loss of only one animal and that the other animal swam away immediately after being shot at (BROCATTO 1966 and 1975; CALDWELL and BROWN 1964).

A total of 303 killer whales were actually captured from November 1961, through March 1976 (Table 1). A total of 237 (78.2%) killer whales were released, 56 (18.5%) killer whales were kept for research and/or public educational display and 10 (3.3%)

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killer whales died during collection operations. No mortalities occurred during collection operations after August 1970, apparently as a result of improved collection techniques. The 10 deaths occurring during collection operations produce an annual mortality rate of 0.22%.

BIGG and WOLMAN (1975 : Table 1, Table 2 and Table 3) reported incorrectly the total number of killer whales collected, died, kept and released in British Columbia and Washington from September 1962 to August 1973. They reported the total number of killer whales caught as 263, total deaths of killer whales during collection operations as 12, total number of killer whales kept for oceanaria as 50 and the total number of killer whales escaped or released as 201.

The actual number of killer whales caught from September 1962, to August 1973, was 289 which reflects an error of 9% in Bigg's and Wolman's report ; actual number of deaths was 10, an error of 20% ; actual number kept for oceanaria was 53, an error of 5.7% ; actual number escaped or released was 226, an error of 11%.

MITCHELL (1975), in quoting T. C. Newby, University of Washington, was apparently given erroneous information regarding two capture operations in Puget Sound in August 1971 and March 1972. The correct information regarding the numbers of killer whales caught, kept and released are shown in Table 1 and the correct information regarding sex and size of the killer whales kept is shown in Table 2.

Individual members or entire pods of killer whales have been encircled by certain collectors more than once. The first collection from one pod yielded two individual animals in 1968, two additional animals in 1971 and the pod was sighted again in January 1976, with four additional young. The pod's total number had increased from 15 in 1968 to 19 in 1976.

Mortality

To date, animal losses (0.22% per year), regardless of cause in capture operations as well as post capture mortalities (4.5% to 4.6% per year) (Table 2) indicates the killer whale is well suited for the role it has recently played in research and public educational display.

Compared to an estimated 10-20% per year (RIDGWAY 1976; LEATHERWOOD 1976 ; ERICKSON 1976) wild mortality rate it would appear the captive management of the killer whale, while still improving, has been extremely successful.

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TABLE 1

KILLER WHALES (*Orcinus orca*) CAUGHT IN CALIFORNIA,
WASHINGTON AND BRITISH COLUMBIA, 1961-1976

DATE	LOCATION	NO. CAPTURED	NO. DIED	NO. KEPT	NO. RELEASED
Nov. 1961	Newport Beach	1a	0	1	0
Sep. 1962	Bellingham	1	1	0	0
Jul. 1964	Saturna Island	1	0	1	0
Jun. 1965	Namu	2	0	1	1
Oct. 1965	Carr Inlet	15	1	1	13
Feb. 1967	Yukon Harbour	15	3	5	7
Jul. 1967	Port Hardy	1	0	1	0
Feb. 1968	Vaughn Bay	15	0	2	13
Feb. 1968	Pender Harbour	1	0	0	1
Apr. 1968	Pender Harbour	7	0	6	1
Jul. 1968	Malcom Island	11	0	1	10
Oct. 1968	Yukon Harbour	33	0	5	28
Apr. 1969	Carr Inlet	11	0	2	9
Oct. 1969	Penn Cove	9	1	0	8
Dec. 1969	Pender Harbour	10	0	6	4
Feb. 1970	Carr Inlet	14	0	1	13
Mar. 1970	Pedder Bay	5	0	3	2
Aug. 1970	Penn Cove	80	4b	7	69
Aug. 1970	Port Madison	1a	0	1	0
Aug. 1971	Penn Cove	24	0	3	21
Nov. 1971	Carr Inlet	19	0	2	17
Mar. 1972	Carr Inlet	9	0	1	8
Mar. 1973	Ocean City	1a	0	1	0
Aug. 1973	Pedder Bay	2	0	1	1
Aug. 1973	Pedder Bay	2	0	2	0
Aug. 1975	Pedder Bay	7	0	2	5
Mar. 1976	Olympia	6	0	0	6
TOTAL		303	10	56	237

a) Stranded and/or attempting to strand.

b) Two of the four killer whales that died during this capture operation were experimentally tranquilized under the direction of Dr. Merrill Spencer, Virginia Mason Research Center. The animals subsequently died.

TABLE 2

KILLER WHALE (*Orcinus orca*) TAKEN FOR RESEARCH
AND PUBLIC EDUCATIONAL DISPLAY

DATE OF CAPTURE	LOCATION OF CAPTURE	SEX	TOTAL LENGTH AT CAPTURE	PRESENT STATUS
Nov. 1961	Newport Beach	Female	17' 0"	Deceased
Jul. 1964	Saturna	Male	?	Deceased
Jun. 1965	Namu	Male	21' 8"	Deceased
Oct. 1965	Carr Inlet	Female	13' 6"	Deceased
Feb. 1967	Yukon Harbor	Female	15' 0"	Alive
Feb. 1967	Yukon Harbor	Male	7' 10"	Alive
Feb. 1967	Yukon Harbor	Male	13' 5"	Alive
Feb. 1967	Yukon Harbor	Female	8' 2"	Deceased
Feb. 1967	Yukon Harbor	Female	11' 6"	Deceased
Jul. 1967	Port Hardy	Male	14' 0"	Deceased
Feb. 1968	Vaughn Bay	Female	18' 0"	Deceased
Feb. 1968	Vaughn Bay	Male	10' 0"	Alive
Apr. 1968	Pender Harbour	Male	16' 9"	Alive
Apr. 1968	Pender Harbour	Female	13' 2"	Deceased
Apr. 1968	Pender Harbour	Female	17' 6"	Alive
Apr. 1968	Pender Harbour	Female	17' 0"	Deceased
Apr. 1968	Pender Harbour	Male	10' 0"	Alive
Apr. 1968	Pender Harbour	?	?	Unknown*
Jul. 1968	Malcom Island	Male	?	Unknown*
Oct. 1968	Yukon Harbor	Male	17' 0"	Unknown*
Oct. 1968	Yukon Harbor	Male	19' 0"	Deceased
Oct. 1968	Yukon Harbor	Male	14' 0"	Alive
Oct. 1968	Yukon Harbor	Male	13' 0"	Deceased
Oct. 1968	Yukon Harbor	Male	11' 6"	Deceased
Apr. 1969	Carr Inlet	Male	19' 0"	Deceased
Apr. 1969	Carr Inlet	Female	15' 0"	Deceased
Dec. 1969	Pender Harbour	Female	17' 0"	Deceased
Dec. 1969	Pender Harbour	Male	13' 6"	Deceased
Dec. 1969	Pender Harbour	Female	12' 0"	Deceased
Dec. 1969	Pender Harbour	Female	9' 5"	Deceased
Dec. 1969	Pender Harbour	Male	12' 0"	Alive
Dec. 1969	Pender Harbour	Female	10' 6"	Alive

(continued)

TABLE 2
(Continued)

DATE OF CAPTURE	LOCALITY OF CAPTURE	SEX	TOTAL LENGTH AT CAPTURE	PRESENT STATUS
Feb. 1970	Carr Inlet	?	?	Unknown*
Mar. 1970	Pedder Bay	Female	11' 2"	Deceased
Mar. 1970	Pedder Bay	Female	14' 0"	Alive
Mar. 1970	Pedder Bay	Female	17' 0"	Deceased
Aug. 1970	Penn Cove	Male	11' 6"	Deceased
Aug. 1970	Penn Cove	Male	11' 8"	Alive
Aug. 1970	Penn Cove	Female	15' 0"	Alive
Aug. 1970	Penn Cove	Male	15' 7"	Deceased
Aug. 1970	Penn Cove	Female	11' 6"	Deceased
Aug. 1970	Penn Cove	Male	11' 0"	Deceased
Aug. 1970	Penn Cove	Male	11' 6"	Deceased
Aug. 1970	Port Madison	Female	9' 2"	Deceased
Aug. 1971	Penn Cove	Female	14' 3"	Alive
Aug. 1971	Penn Cove	Female	12' 5"	Deceased
Aug. 1971	Penn Cove	Male	12' 0"	Alive
Nov. 1971	Carr Inlet	Male	13' 2"	Deceased
Nov. 1971	Carr Inlet	Male	13' 6"	Deceased
Mar. 1972	Carr Inlet	Male	11' 0"	Deceased
Mar. 1973	Ocean City	Female	15' 11"	Alive
Aug. 1973	Pedder Bay	Female	18' 0"	Deceased
Aug. 1973	Pedder Bay	Female	18' 0"	Deceased
Aug. 1973	Pedder Bay	Male	18' 10"	Deceased
Aug. 1975	Pedder Bay	Female	13' 2"	Deceased
Aug. 1975	Pedder Bay	Male	14' 6"	Alive

* The present status of these killer whales is unknown. All four killer whales were last observed alive and either escaped the net enclosures in which they were being held or escaped during open ocean training.

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