

STRANDINGS AND INCIDENTAL MORTALITY OF CETACEANS  
ON THE B.C. COAST, 1990

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ABSTRACT

Thirty-eight records are presented of cetaceans that stranded or were incidentally caught in fishing operations in British Columbia, Canada, in 1990. This number is greater than recorded in any previous year, likely due to an increase in reporting effort. Information from other sources indicates that this number likely represents only a fraction of the total mortality. Seven species were represented in stranding events, four of which were also incidentally caught in fisheries. One gray whale (Eschrichtius robustus) drowned after entangling in a net pen used in the herring spawn on kelp fishery. Three Pacific white-sided dolphins (Lagenorhynchus obliquidens), a harbour porpoise (Phocoena phocoena) and a Dall's porpoise (Phocoenoides dalli) were caught in a gillnet fishery for salmon, a gillnet test fishery, and a trawl test fishery, respectively. Other species that stranded were minke whale (Balaenoptera acutorostrata), killer whale (Orcinus orca) and sperm whale (Physeter macrocephalus). Research is being undertaken on levels of environmental contaminants, parasites, food habits, and causes of mortality.

INTRODUCTION

Examining whales, porpoises and dolphins which have live stranded or washed up dead provides important information on causes of mortality, as well as allowing for collection of information on parasite loads, food habits, reproductive parameters, seasonal distributions and environmental contaminant levels. Collection of skeletal materials is also valuable for both educational and research purposes.

This fourth annual report of records collected through the Stranded Whale and Dolphin Program of B.C. summarizes cetacean strandings and incidental mortality on the west coast of Canada during 1990. Stranding records from this area from 1987 through 1989 have been presented by Baird, Langelier and Stacey (1988), Stacey, Baird and Langelier (1989) and Langelier, Stacey and

Baird (1990). The Program records cetaceans which are: found dead, either floating or washed up on shore; involved in a collision with fishing gear; strand live and return to the water (with or without human assistance); or strand live and subsequently die. Records are obtained from a wide variety of sources (see Acknowledgements).

## RESULTS AND DISCUSSION

Since the beginning of this program in 1987, the number of strandings and incidental catches reported has increased yearly. The 38 records for 1990, presented in Table 1, is the largest number ever recorded from a single year in British Columbia. We believe the continued increase reflects increased awareness and reporting, rather than an actual increase in the number of animals stranding or being caught in fishing gear. With such a large number of records, often with several in close proximity, special attention has been paid to avoid duplicate reports, such as in the case when a carcass is not recovered and washes away to a different location. Details on some records, particularly where the animal was not recovered, are often received from several sources, as the carcass may remain on the beach for extended periods. However, we heard of many strandings from only one source, implying that many more are going unreported. In many cases, only fragmentary information is given, not allowing us to determine the exact location or species identification. Thus several of those records listed in Table 1 are unidentified, or only a tentative identification is given (marked with a ?). Marking of specimens which are not going to be recovered is important for future identification and avoidance of duplicate records, and photographs should be obtained to allow for future matching of records. However, potential problems with marking animals include obscuring natural marks which might be used for species or individual identification, or these marks being interpreted by a later observer as a potential cause of death.

We have information on several additional records not listed in Table 1 which are possibly different from any records listed, but the information obtained was not detailed enough to positively rule out a duplicate record. We are aware of two additional records from 1989, subsequent to the report by Langelier et al. (1990), which are also presented in Table 1. Similarly, additional records from 1990 will likely be brought to our attention and will be noted in future reports.

Seven species were recorded from 1990, including (with number of records in brackets, in order of decreasing frequency): gray whale (Eschrichtius robustus - 13); harbour porpoise (Phocoena phocoena - 9); Pacific white-sided dolphin (Lagenorhynchus obliquidens - 4); killer whale (Orcinus orca - 3); Dall's porpoise (Phocoenoides dalli - 2); minke whale (Balaenoptera acutorostrata - 1) and sperm whale (Physeter macrocephalus - 1). Records where identification was not positive are not included in these totals. Stranding records were obtained throughout the year, with a mid-summer (June and July) peak in records, possibly

due to increased public reporting during that period.

The number of gray whales reported from this year is the largest number recorded in one year in B.C. (see Baird, Stacey, Duffus and Langelier 1990). One of these records is of an animal killed in a net pen from the herring roe on kelp fishery; apparently the first record of incidental mortality of a gray whale in this fishery in B.C. The Dall's porpoise and harbour porpoise listed in Table 1 as incidentally caught were both taken in test fisheries (trawl and gillnet respectively), while the Pacific white-sided dolphins listed were caught in the salmon gillnet fishery. The total number of small cetaceans recorded, both as incidentally caught or stranded, is considerably lower than the total number estimated to be killed annually in fisheries (Stacey, Baird and Duffus 1990), emphasizing that only a small proportion of incidents are presently being reported. The number of large cetaceans reported is likely more representative of their total mortality. Decomposition of large animals can be prolonged for several months, while carcasses of small cetaceans may become unrecognizable within days due to scavengers and decomposition. However, as noted by Heyning and Dahlheim (1990), less than 5% of the estimated 1,407 gray whales which die annually in the eastern North Pacific (based on 1988 population estimates) are recorded in stranding records along the North American coast. Thus even for large cetaceans, existing stranding records likely greatly underestimate total mortality. This is especially true for the B.C. coast, considering the inaccessibility of much of the 27,000 km of coastline.

All or portions of the skeleton were obtained from 15 of the animals stranded in 1990, for educational and/or research purposes. These specimens are presently held by the following institutions, organizations or businesses: Bamfield Marine Station; Museum of Northern British Columbia; Royal British Columbia Museum; Sidney Museum; Department of Archaeology, Simon Fraser University; Stubbs Island Charters; Zooarchaeology Collection, University of Victoria; West Coast Whale Research Foundation; and the Marine Mammal Research Group. Individuals wishing more information on any of the records listed should contact the authors or the above organizations.

To facilitate reporting of strandings in future years, the stranding program has installed a toll-free reporting number (1-800-665-5939). Future research will continue to shed light on the causes of mortality of cetaceans on the B.C. coast.

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#### REFERENCES

- Baird, R.W., Stacey, P.J., Duffus, D.A. and Langelier, K.M. 1990. An evaluation of gray whale (Eschrichtius robustus) mortality incidental to fishing operations in British Columbia, Canada. Paper SC/A90/G21 presented to the IWC Scientific Committee, April 1990. 27pp.
- Baird, R.W., Langelier, K.M. and Stacey, P.J. 1988. Stranded whale and dolphin program of B.C. - 1987 report. Wildlife Veterinary Report 1(1):9-12.
- Heyning, J.E. and Dahlheim, M.E. 1990. Strandings and incidental takes of gray whales. Paper SC/A90/G2 presented to the IWC Scientific Committee, April 1990. 16pp.
- Langelier, K.M., Stacey, P.J. and Baird, R.W. 1990. Stranded whale and dolphin program of B.C. - 1989 report. Wildlife Veterinary Report 3(1):10-11.
- Stacey, P.J., Baird, R.W. and Duffus, D.A. 1990. A preliminary evaluation of incidental mortality of small cetaceans, primarily Dall's porpoise (Phocoenoides dalli), harbour porpoise (Phocoena phocoena), and Pacific white-sided dolphins (Lagenorhynchus obliquidens) in inshore fisheries in British Columbia, Canada. Paper SC/42/SM20 presented to the IWC Scientific Committee, June 1990. 16pp.
- Stacey, P.J., Baird, R.W. and Langelier, K.M. 1989. Stranded whale and dolphin program 1988 report. Wildlife Veterinary Report 2(1):10-11.

Table 1

Strandings and incidental catches from 1990, and previously unreported records from 1989 (V.I. = Vancouver Island).

NUMBER <sup>1</sup>	DATE <sup>2</sup>	SPECIES	LOCATION <sup>3</sup>	LATITUDE	LONGITUDE	COMMENTS <sup>4</sup>
SWDP89-33	00Jun89	large whale	W coast Swindle I.	52°16'N	128°29'W	C,u
SWDP89-34	00Sep89	porpoise	Princesa Ch., Strange I.	49°43'N	126°38'W	C,4,u
SWDP90-01	00Jul90	minke whale	Nootka I.	49°50'N	126°58'W	C,4,u
SWDP90-02	16Jan90	killer whale	Petrel Channel	53°26'N	130°5'W	C,1,2,17,m
SWDP90-03	20Mar90	small cetacean	Beaver Hrb., V.I.	50°42'N	127°24'W	C,u
SWDP90-04	25Mar90	gray whale	Nesquiat Hrb., V.I.	49°26'N	126°27'W	C,u
SWDP90-05	18Apr90	gray whale	Esperanza In., V.I.	49°51'N	127°7'W	F,u
SWDP90-06	21Apr90	harbour porpoise	Victoria, V.I.	48°24.5'N	123°21.5'W	C,1,2,4,7,8,9,10,13,14,15,17,19,m
SWDP90-07	28May90	gray whale	Raft Cove, V.I.	50°35'N	128°15'W	C,4,10,13,19,u
SWDP90-08	31May90	gray whale	S Sombrio Pt., V.I.	48°28'N	124°21'W	C,u
SWDP90-09	01Jun90	gray whale	Ferrer Pt., Nootka I.	49°45'N	126°58'W	C,1,2,4,10,u
SWDP90-10	04Jun90	Pacific white-sided dolphin	Ueluelet, V.I.	48°57'N	125°32'W	C,1,2,4,9,10,13,15,f
SWDP90-11	10Jun90	Dall's porpoise	Trial I.	48°24.1'N	123°18.4'W	C,1,4,8,9,10,13,14,f
SWDP90-12	11Jun90	gray whale	Kitasu Bay, Swindle I.	52°33'N	128°41'W	A(herring net pen),2,u
SWDP90-13	27Jun90	gray whale	Hiller Creek, Graham I.	53°20'N	131°56'W	C,1,f
SWDP90-14	06Jun90	gray whale	South Beach, Graham I.	54°3.1'N	132°0'W	C,1,2,f
SWDP90-15	21Jun90	minke whale?	Actus I.	50°0'N	127°25'W	C,u
SWDP90-16	25Jul90	harbour porpoise	Qualicum River, V.I.	49°24'N	124°37'W	A(gillnet),1,4,8,9,10,13,14,15,17,19,m
SWDP90-17	01Jul90	gray whale	Hecate Strait	54°9.57'N	131°21.35'W	C,u
SWDP90-18	16Jul90	porpoise sp.	Rennel Sound, Graham I.	53°22'N	132°32'W	C,u
SWDP90-19	22Jul90	killer whale	Dundas I.	54°37.53'N	130°56.3'W	C,1,2,4,8,9,10,13,14,15,17,f
SWDP90-20	24Jul90	gray whale	Lennard I.	49°7'N	125°55'W	C,4,f
SWDP90-21	18Jul90	gray whale	2 mi. E Lookout I.	49°59'N	127°26'W	C,1,2,10,13,f
SWDP90-22	26Jul90	gray whale?	7 mi. W Cape Beale, V.I.	48°43'N	125°25'W	C,u
SWDP90-23	00Aug90	Dall's porpoise	off Brooks Peninsula	50°N	128°W	A(trawl),1,2,4,7,8,9,10,13,14,15,19,m
SWDP90-24	10Aug90	harbour porpoise?	Pill Pt., V.I.	49°57.5'N	127°4.5'W	C,u
SWDP90-25	00Aug90	Pacific white-sided dolphin	Ogden Ch.	53°52'N	130°18'W	B(gillnet),u
SWDP90-26	00Aug90	Pacific white-sided dolphin	Ogden Ch.	53°52'N	130°18'W	A(gillnet),u
SWDP90-27	05Apr90	gray whale	Kettle In., Aristazabal I.	52°41'N	129°14'W	C,4,u
SWDP90-28	25Sep90	harbour porpoise	Victoria, V.I.	48°24.8'N	123°22.8'W	C,1,4,9,10,13,m
SWDP90-29	11Oct90	harbour porpoise	Tofino, V.I.	49°10'N	125°55'W	C,D,u
SWDP90-30	18Sep90	harbour porpoise	Wickaninish Beach, V.I.	49°2'N	125°40'W	C,D,u
SWDP90-31	00Sep90	harbour porpoise	Cox Bay, V.I.	49°6'N	125°51'W	C,D,u
SWDP90-32	29Jun90	gray whale	Weibe I.	48°53.5'N	125°17.2'W	C,D,u
SWDP90-33	06Aug90	harbour porpoise	Clarke I.	48°53.4'N	125°22.5'W	C,D,u
SWDP90-34	00Oct90	harbour porpoise	Loch Bay, Gabriola I.	49°11.2'N	123°49'W	C,D,u
SWDP90-35	25Oct90	Pacific white-sided dolphin	Johnstone Strait	50°33'N	126°50'W	A(gillnet),1,2,4,7,8,9,10,13,14,15,17,19,m
SWDP90-36	01Dec90	killer whale	Malcolm I.	50°38'N	126°51'W	C,1,2,4,8,9,10,13,14,15,17,19,f
SWDP90-37	07Dec90	sperm whale	Tausiat Falls, V.I.	48°41.7'N	124°56.3'W	C,1,2,4,10,u
SWDP90-38	08Dec90	harbour porpoise	Vance I.	49°09'N	123°41'W	C,1,4,8,9,10,13,14,15,16,17,f

#### Notes to Table 1.

<sup>1</sup>Consecutive record numbers are given as each record is received, therefore records are not in chronological order. SWDP = Stranded

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<sup>2</sup>Date shown is earliest date reported. Many records were also reported seen either on shore or floating from later dates. Similarly, some animals may have been dead for up to a month when first reported.

<sup>3</sup>Location noted is last known location. In some cases, animals were seen floating on one day, with later reports of what we believe is the same animal washed up nearby.

<sup>4</sup>Comments: A. incidental catch, died; B. live stranded, died; C. found dead; D. not recovered; E. incidental catch, released alive; F. live stranded, returned to water alive; 1. measurements taken; 2. photographs taken; 3. radiographs; 4. skeleton/baleen, whole/partially collected; 5. aging of teeth; 6. blood tests/cultures; 7. histology samples; 8. gross post mortem examination; 9. heavy metal toxicology analysis; 10. organochlorine tissue level analysis; 11. dioxin tissue level analysis; 12. duplicate tissue samples stored in Ottawa; 13. duplicate tissue samples stored in Nanaimo; 14. parasitology examination; 15. stomach content analysis; 16. reproduction studies; 17. genetic analysis; 18. plaster cast replica of whole/part animal; 19. educational use (anatomy labs, class displays etc); Sex f=female, m=male, u=unknown. Note: some categories are not used in Table 1 but are listed for consistency with previous reports by Baird et al. (1988), Stacey et al. (1989) and Langelier et al. (1990).