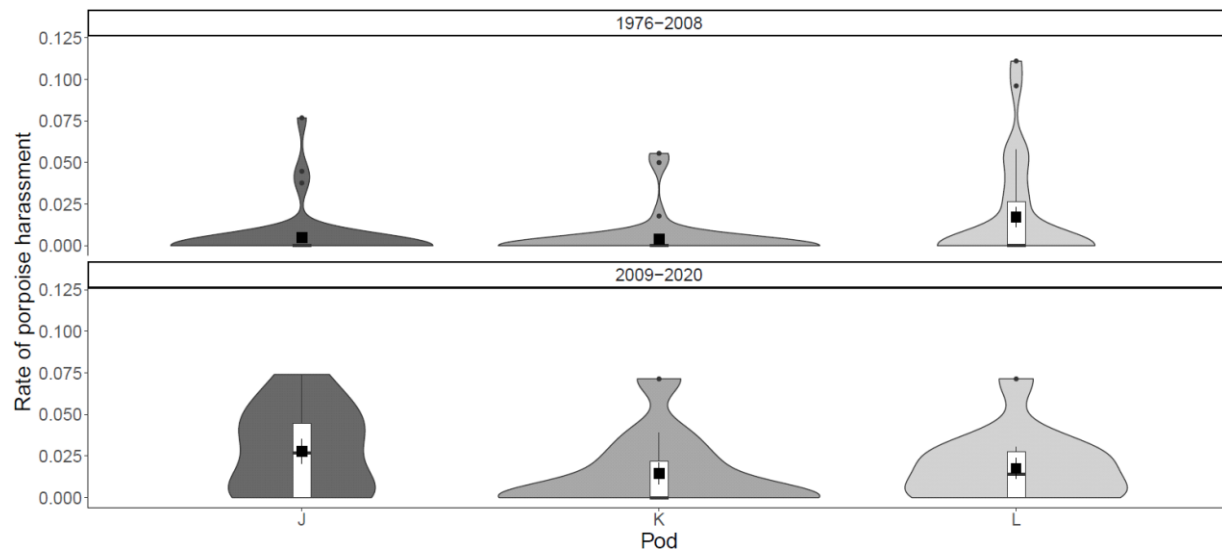


**FIGURE S1** Density plots representing the full distribution of the annual rate of porpoise harassment by pod each year, for 1976–2004 (top panel) and 2005–2020 (bottom panel). Note: here the cut-off for periods is 2004. The box plots (flat for all pods in period 1) represent the median  $\pm$  interquartile range; squares represent the mean  $\pm$  standard error; and dots represent the outliers. *Y*-axis units are the pod-specific number of porpoise harassment incidents per year divided by the number of days the pod was observed by CWR per year.



**FIGURE S2** Density plots representing the full distribution of the annual rate of porpoise harassment by pod each year, for 1976–2008 (top panel), and 2009–2020 (bottom panel). Note: here the cut-off for periods is 2008. The box plots (flat for all pods in period 1) represent the median  $\pm$  interquartile range; squares represent the mean  $\pm$  standard error; and dots represent the outliers. *Y*-axis units are the pod-specific number of porpoise harassment incidents per year divided by the number of days the pod was observed by CWR per year.

**TABLE S1** List of observed incidents ( $n = 78$ ) of Southern Resident killer whales (SRKWs) harassing or killing porpoises in the Salish Sea between 1962 and 2020.

Incident number	Year	Harassment classification	Porpoise species	Number of porpoises	Age class of porpoise(s)	SRKWs involved
1 <sup>a</sup>	1962	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	Two individuals (adult male and female) of unknown pod
2 <sup>a</sup>	1976	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	Two L pod individuals (female and calf)
3	1981	Unknown outcome	<i>Phocoenoides dalli</i>	1	Unknown	At least two L pod individuals
4	1981	Unknown outcome	Unknown	1	Unknown	At least two L pod individuals
5 <sup>a</sup>	1982	Suspected kill	<i>Phocoenoides dalli</i>	1	Subadult	Four L pod individuals (females and calves)
6	1989	Unknown outcome	<i>Phocoenoides dalli</i>	1	Unknown	15+ L pod individuals
7	1990	Unknown outcome	Unknown	1	Unknown	Estimated 15 K pod individuals
8 <sup>a</sup>	1992	Unknown outcome	<i>Phocoenoides dalli</i>	1	Neonate	L5, L58, L73
9	1992	Unknown outcome	<i>Phocoenoides dalli</i>	1	Unknown	Four L pod individuals (two females, one juvenile, one sprouter)
10 <sup>a</sup>	1992	Unknown outcome	<i>Phocoenoides dalli</i>	1	Neonate	L21 and at least one other L pod individual
11 <sup>a</sup>	1994	Unknown outcome	<i>Phocoenoides dalli</i>	1	Neonate	L5, L58, L73
12	1998	Unknown outcome	<i>Phocoena phocoena</i>	2	Unknown	One L pod individual (male)
13	2003	Unknown outcome	<i>Phocoenoides dalli</i>	15+	Unknown	10 individuals from J pod
14	2003	Suspected kill	<i>Phocoena phocoena</i>	1	Neonate or calf	L5 and L73
15	2003	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	L7 and L57
16	2003	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	At least two J pod individuals
17 <sup>b</sup>	2004	Confirmed kill	<i>Phocoenoides dalli</i>	1	Neonate	L21, L47, and another L pod individual
18	2004	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	L54 and L100
19	2005	Unknown outcome	<i>Phocoena phocoena</i>	1	Adult	One J pod individual
20	2005	Unknown outcome	<i>Phocoena phocoena</i>	1	Calf	J27, J31, and another J pod individual

21	2005	Unknown outcome	<i>Phocoena phocoena</i>	1 targeted, 1 other in area	Unknown	J16, J26, J36
22 <sup>b</sup>	2005	Unknown outcome for first porpoise; Confirmed kill for second porpoise	<i>Phocoena phocoena</i>	2	Unknown (first porpoise), Subadult (second porpoise and confirmed kill)	J11, J27, J39
23	2005	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	At least two J pod individuals
24 <sup>b</sup>	2005	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate	L5, L73, L67, L101
25	2005	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	L5, L73, L67, L101
26	2005	Confirmed kill for one porpoise (calf); Unknown outcome for second porpoise (dam; although it was suspected the dam survived)	<i>Phocoena phocoena</i>	2	Cow/calf pair	J30, J31
27	2005	Suspected kill	Unknown	1	Unknown	L95, L72, and two other L pod individuals
28	2005	Unknown outcome	Unknown	1	Calf	At least two individuals, likely L pod
29	2006	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	At least two J pod individuals
30	2006	Confirmed kill	<i>Phocoena phocoena</i>	1	Uncertain	J35, J37, J40
31	2006	Unknown outcome	Unknown	1	Unknown	K40, K16, K35
32	2006	Suspected kill	<i>Phocoena phocoena</i>	1	Neonate	Four L pod individuals
33	2006	Confirmed kill	<i>Phocoena phocoena</i>	1	Calf	L12, L41, L77, L94
34	2006	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	One individual from likely J pod
35	2007	Unknown outcome	Unknown	1	Calf	L106, L41, L57, L82, L86, L95, L77, L94
36	2007	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	L21, L26, L47, and another L pod individual
37	2007	Unknown outcome	Unknown	1	Unknown	At least one K pod individual

38	2008	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	L83, L110, L47, L111, L91
39 <sup>b</sup>	2008	Confirmed kill	<i>Phocoena phocoena</i>	1	Calf	At least one L pod individual
40	2008	Suspected kill	<i>Phocoena phocoena</i>	1	Subadult or adult	L83, L91, L110
41	2008	Unknown outcome	<i>Phocoenoides dalli</i>	3	One cow/calf pair and another individual	L57
42	2008	Unknown outcome	<i>Phocoenoides dalli</i>	1	Neonate or calf	L55 and three other L pod individuals
43 <sup>b</sup>	2009	Confirmed kill	<i>Phocoena phocoena</i>	1	Subadult	J31, J36, J39, K37
44	2009	Unknown outcome	<i>Phocoenoides dalli</i>	1	Unknown	J27, J31, J39
45 <sup>b</sup>	2009	Confirmed kill	<i>Phocoena phocoena</i>	1	Subadult	J30 and another individual
46	2010	Suspected kill	<i>Phocoena phocoena</i>	1	Unknown	L55
47 <sup>b</sup>	2010	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate	L22, L94, L113
48	2010	Suspected kill	<i>Phocoena phocoena</i>	1	Unknown	K36, K42
49	2011	Unknown outcome	Unknown	1	Unknown	At least one J pod individual
50	2011	Unknown outcome	Unknown	1	Neonate or calf	L72 and likely one K pod individual
51	2013	Unknown outcome	<i>Phocoena phocoena</i>	5	Unknown	K21, K25, K26, K35
52	2013	Suspected kill	<i>Phocoena phocoena</i>	1	Subadult	At least one individual
53	2013	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	K16
54	2014	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J16, J26, J36, J42
55	2014	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J35, J47
56	2014	Suspected kill	<i>Phocoena phocoena</i>	1	Calf	L72, L105
57	2014	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J36, J41, J42
58	2014	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate	L22, L94, L113
59	2015	Unknown outcome	<i>Phocoena phocoena</i>	1	Calf	K22
60	2015	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate or calf	K22, K33
61	2015	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	L77, L119

62	2015	Suspected kill	<i>Phocoena phocoena</i>	1	Unknown	J47
63	2015	Confirmed kill	<i>Phocoena phocoena</i>	1	Adult	At least one J pod individual
64	2016	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate	J40
65	2016	Suspected kill	<i>Phocoena phocoena</i>	1	Neonate or calf	L119
66	2016	Unknown outcome	<i>Phocoena phocoena</i>	1	Neonate	J2
67	2016	Suspected kill	<i>Phocoena phocoena</i>	1	Neonate or calf	J35, J47, L87
68	2016	Confirmed kill	<i>Phocoena phocoena</i>	1	Neonate	L103, L109, L123
69	2016	Confirmed kill	<i>Phocoena phocoena</i>	1	Calf	L77, L113, L119
70	2017	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	Most of J pod and L87, who is known to have switched pods and was traveling with J pod at this time. All whales were reported as engaging in the activity; L87, J17, J46, and J41 were photographed engaging.
71	2018	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J39
72	2018	Unknown outcome	<i>Phocoena phocoena</i>	1	Adult	J22, J40, J49
73	2018	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J38
74	2018	Unknown outcome	<i>Phocoenoides dalli</i>	1	Unknown	At least two L pod individuals from the L12 matriline
75	2019	Unknown outcome	<i>Phocoena phocoena</i>	1	Calf	L115
76	2020	Unknown outcome	<i>Phocoena phocoena</i>	2	One adult, other unknown	J31, J56, J36, J47, J49
77	2020	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	Two individuals of unknown pod
78	2020	Unknown outcome	<i>Phocoena phocoena</i>	1	Unknown	J37 and another J pod individual

<sup>a</sup> Incident is listed in Table S2.

<sup>b</sup> Incident is listed in Table S3.

**TABLE S2** Literature describing incidents of Southern Resident killer whales harassing porpoises.

Date of incident in literature (Number of incident[s])	Primary source	Subsequent sources
September 1962 (1)	Hoyt, 1990	Jefferson et al., 1991
August 1976 (1)	Chandler et al., 1977	Balcomb et al., 1980; Felleman, 1986; Heimlich-Boran, 1987; Felleman et al., 1991; Jefferson et al., 1991
July 1982 (1)	Osborne et al., 1985	Felleman, 1986; Felleman et al., 1991; Heimlich-Boran, 1987; Jefferson et al., 1991
1992 (2)	The Whale Museum, 1995	
Summer 1994 (1)	The Whale Museum, 1995	

*Note:* Ford et al., 1998 lists seven cases of Southern Resident killer whales (SRKWs) harassing porpoises between 1973-1996. Those cases are inclusive of the above cases represented in the literature that fall within that period, as well as two additional cases that were not previously reported in the literature and are represented in Table S1. Additionally, Ford et al. present one case of SRKWs harassing a harbor seal (*Phoca vitulina*) which was first reported in The Whale Museum's 1995 June newsletter. Ford et al. also present one case involving Northern Resident killer whales (NRKWs) harassing a porpoise, which we report in Table S4.

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**TABLE S3** Necropsy results of porpoises killed by Southern Resident killer whales.

<b>Incident number from Table S1</b>	<b>Year</b>	<b>Species</b>	<b>Sex</b>	<b>Age class</b>	<b>SRKW antagonists</b>	<b>Bilateral lacerations and abrasions</b>	<b>Gross internal lesions</b>	<b>Microscopic internal lesions</b>	<b>Macroscopic fractures</b>	<b>Underlying condition?</b>
17	2004	<i>Phocoenoides dalli</i>	M	Neonate	L21, L47	No	No	Yes; hemorrhage on brain, brain stem, lung, and liver	No	No
22	2005	<i>Phocoena phocoena</i>	F	Subadult	J11, J27, J39	Yes; thorax, abdomen, along the dorsum cranial and caudal to the dorsal fin, right lobe of fluke	Yes; hemothorax, foam in major and minor airways, discoloration on lungs and liver	Yes; hemorrhage on brain, lung, liver, heart, spleen, and adrenal gland	No	No
24	2005	<i>Phocoena phocoena</i>	F	Neonate	L5, L73, L67, L101	Yes; thorax, cranium, along the dorsum cranial to the dorsal fin	Yes; subcutaneous hemorrhage near cranium, atelectasis (lung collapse)	Yes; hemorrhage on liver and lymph node	No	No
39	2008	<i>Phocoena phocoena</i>	M	Calf	L pod members	Not recorded	Yes; subcutaneous hematoma	Yes; vesiculobullous dermatitis and pulmonary edema	No	No



								consistent with blunt force trauma		
43	2009	<i>Phocoena phocoena</i>	M	Subadult	J31, J36, J39, K37	Yes; rostrum, abdomen, along the dorsum caudal to the dorsal fin, flukes	Yes; hemothorax and hemoperitoneum, hemorrhage on eyes (conjunctiva), lung discoloration (more prominent caudo-ventrally), bilateral enlarged hilar lymph nodes	Yes; lung, spleen, adrenal gland	No	Yes; bronchopneumonia and to a lesser extent, multisystemic parasitism
45	2009	<i>Phocoena phocoena</i>	F	Subadult	J30 and unidentified female	Not recorded	Yes; bilateral hemorrhage on thoracic skeletal musculature and lung, hemoperitonem	Yes; hemorrhage on skeletal muscle, lung, lymph nodes, larynx and trachea; edema on thymus, skeletal muscle; pleural edema fluid	No	No
47	2010	<i>Phocoena phocoena</i>	F	Neonate	L22, L94, L113	Not recorded	Yes; hematoma on left paralumbar fossa and thoracic wall	Yes; hemorrhage on skeletal muscle and colon; edema on lung, thymus, and kidney	No	No

**TABLE S4** Incidents of porpoise harassment or phocoenacide involving Northern Resident killer whales (NRKW) or Alaska Resident killer whales (ARKW).

<b>Date</b>	<b>Location</b>	<b>Population(s)</b>	<b>Pod(s)</b>	<b>Whale(s)</b>	<b>Porpoise species</b>	<b>Porpoise outcome</b>
June 10, 1994	Fisher Channel, British Columbia	NRKW	A4	A11, A13, A56	Harbor	Unknown outcome
June 10, 1994	Fisher Channel, British Columbia	NRKW	A4	A11, A13, A56, member of A24 matriline	Dall's	Unknown outcome
July 19, 2002	Glacier Bay, Alaska	ARKW	AG	Unknown	Harbor	Suspected kill
July 10, 2003	Cracroft Point (OrcaLab), British Columbia	NRKW	G1	Members of G17 matriline	Harbor	Unknown outcome
November 8, 2004	Cracroft Point (OrcaLab), British Columbia	NRKW	A1	A32, A37, A46	Dall's	Unknown outcome
July 28, 2015	George Island, Alaska	ARKW	Possible AG	Unknown	Harbor	Unknown outcome
July 28, 2017	Egeria Shoal, British Columbia	NRKW	I31	I68, I136	Dall's	Suspected kill