Juvenile Pacific salmon in the Strait of Georgia – sockeye salmon

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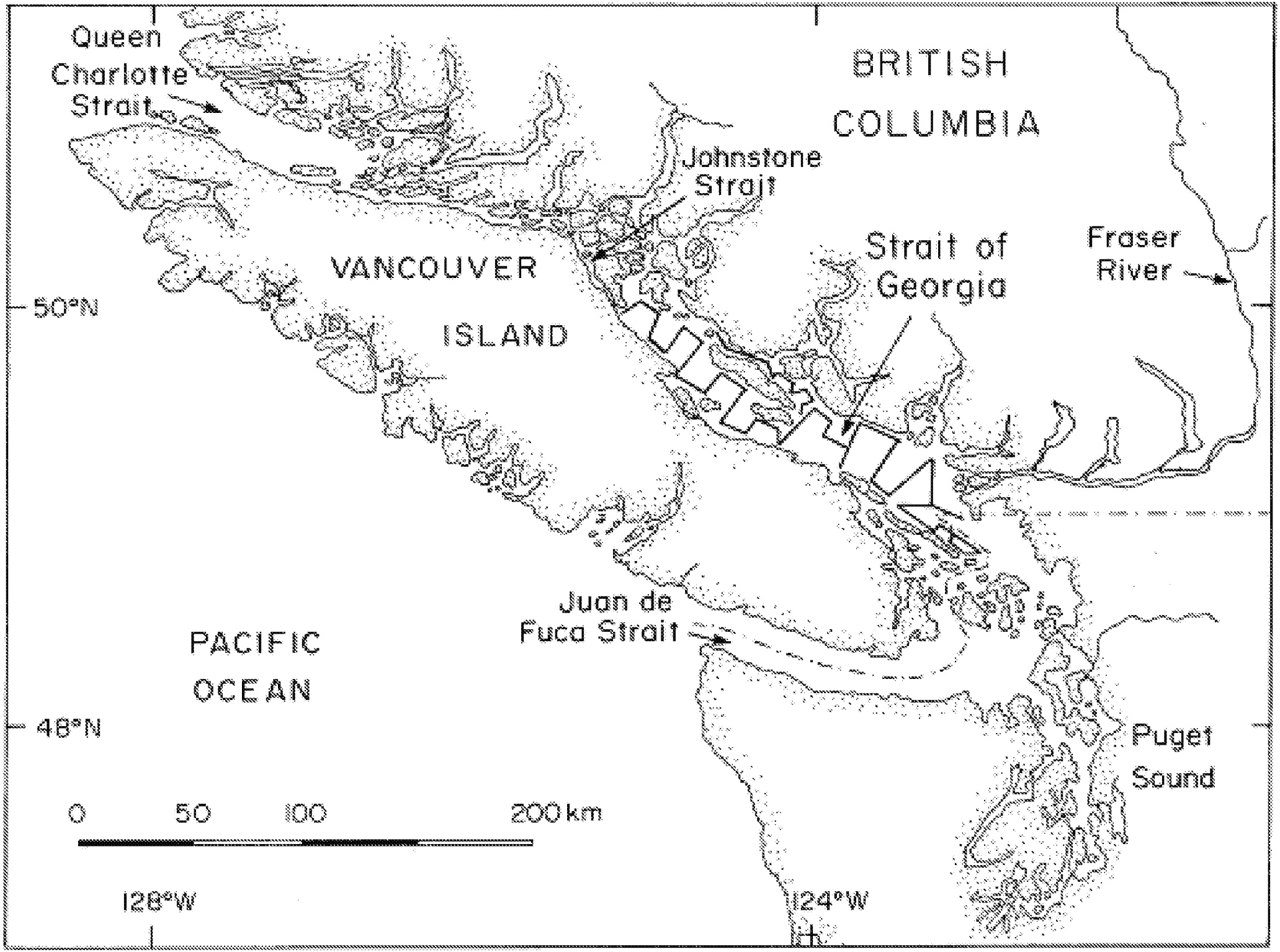
The amount of rapid growth in the early marine period determines brood year strength

“Whereas growth was apparently constrained by intraspecific competition during the first into the second month at sea, this competition apparently ceased after this period. We hypothesize that the post-smolts are more adept at making changes in their diet as the growth season progresses”

Friedland, K.D., D. Moore and F. Hogan. 2009. Retrospective growth analysis of Atlantic salmon (Salmo salar) from the Miramichi River, Canada. Can. J. Fish. Aquat. Sci. 66: 1294-1308.



CAN185453_0004

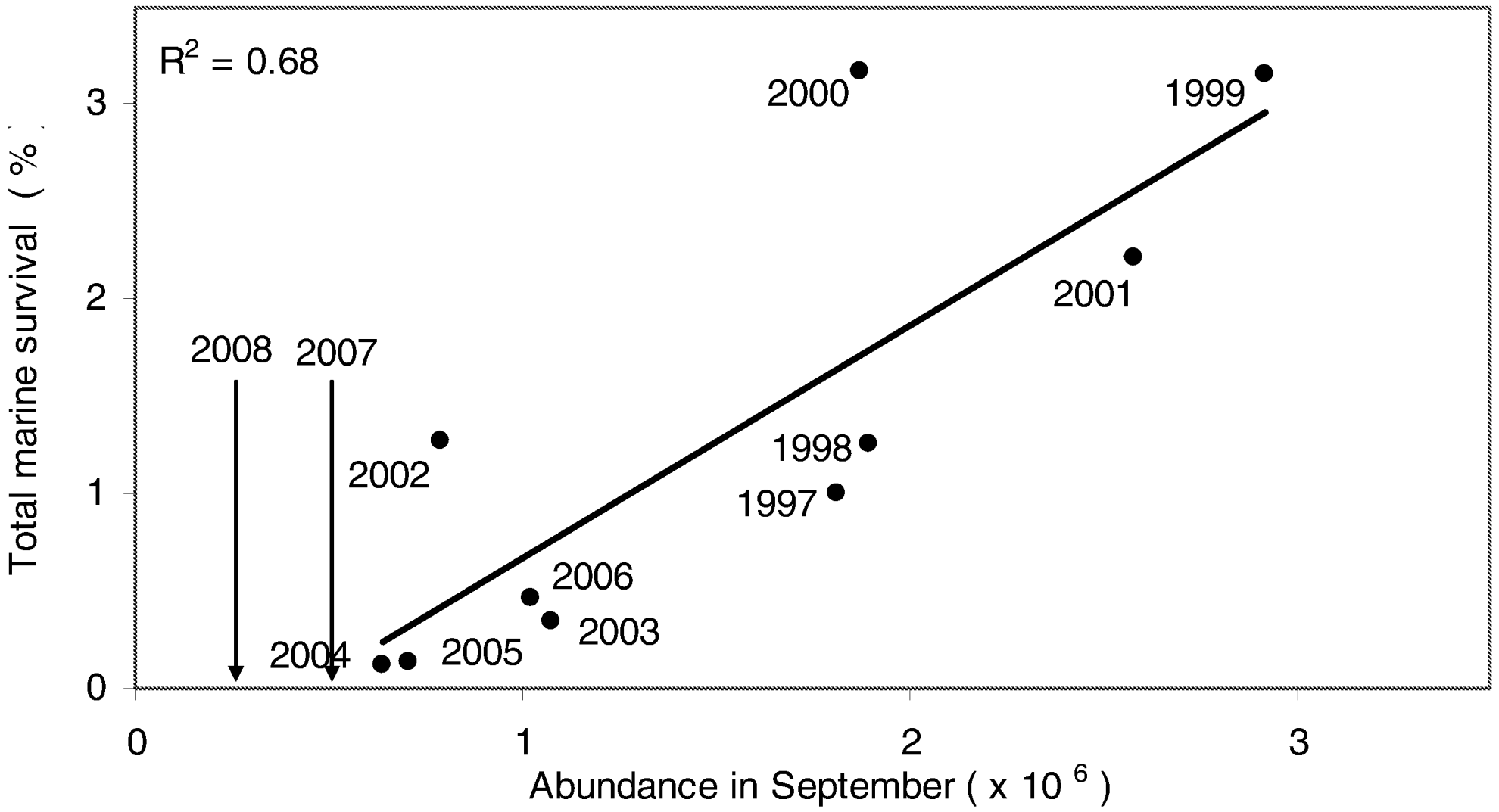
Catches of Juvenile Pacific salmon in the Strait of Georgia, July 1997-2009

Year	Sets	Coho	Chinook	Chum	Pink	Sockeye	Totals	CPUE
Total	**1,239**	**27,882**	**30,086**	**92,258**	**28,438**	**16,761**	**195,425**	**157**
								+/- 79
1997	65	522	1,600	913	18	2,492	**5,545**	**85**
1998	95	1,262	1,876	5,092	2,181	487	**10,898**	**115**
1999	98	1,649	1,692	4,106	8	734	**8,189**	**84**
2000	102	4,974	2,951	14,493	4,832	475	**27,725**	**272**
2001	107	5,335	2,954	6,862	45	1,033	**16,229**	**152**
2002	118	2,179	2,402	1,158	2,855	247	**8,841**	**75**
2003	-	-	-	-	-	-	**-**	**-**
2004	104	2,687	3,894	9,972	4,722	2,439	**23,714**	**228**
2005	82	416	694	11,494	26	366	**12,996**	**158**
2006	98	3,829	3,440	5,150	3,998	178	**16,595**	**169**
2007	113	1,640	3,393	1,335	1	157	**6,526**	**58**
2008	179	1,181	3,214	14,128	9,683	6,593	**34,799**	**194**
2009	78	2,208	1,976	17,555	69	1,560	**23,368**	**300**

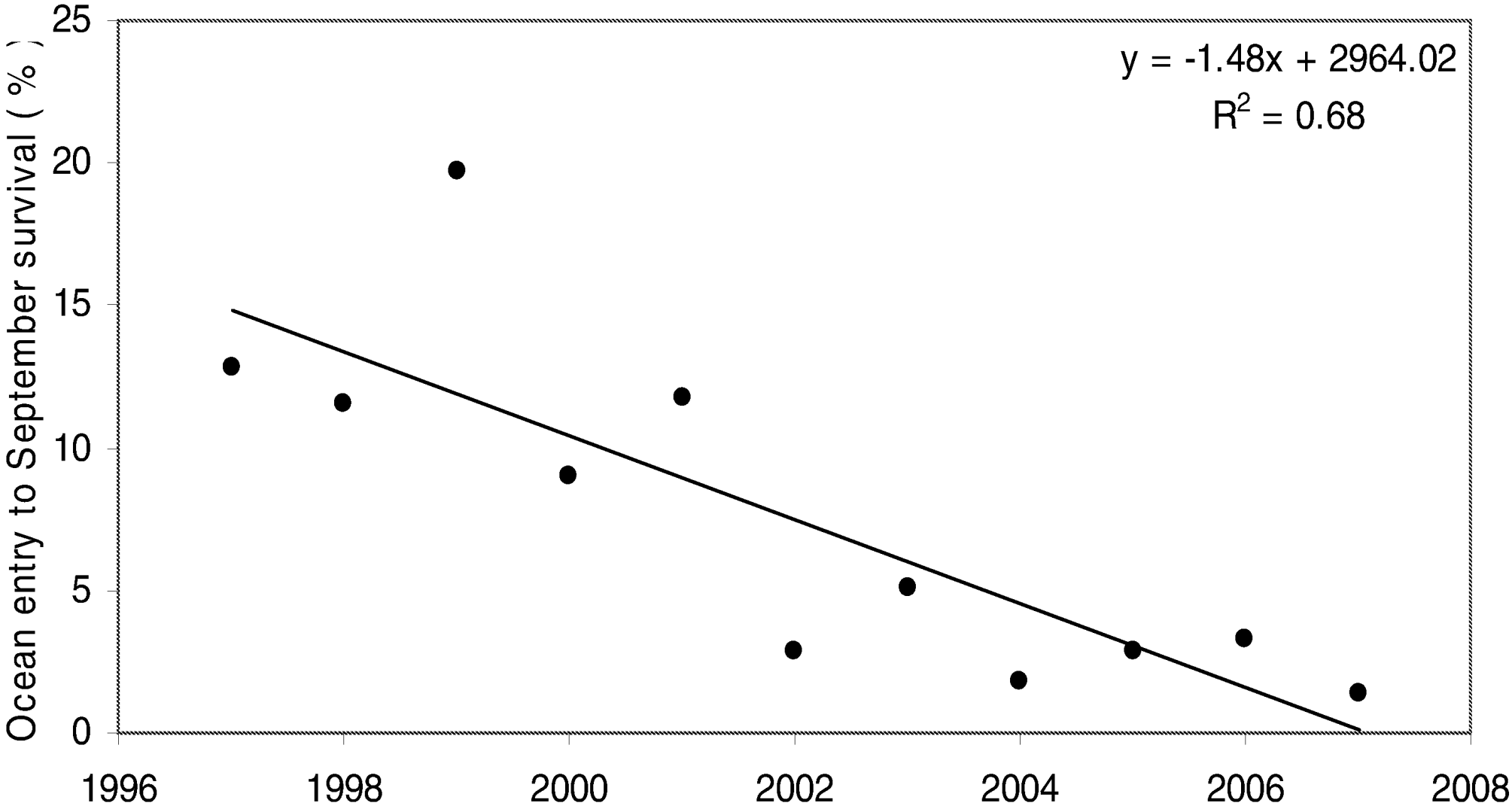
Catches of Juvenile Pacific salmon in the Strait of Georgia, September 1997-2008

Year	Sets	Coho	Chinook	Chum	Pink	Sockeye	Totals	CPUE
Total	**1,227**	**12,715**	**21,740**	**42,057**	**9,461**	**11,939**	**97,854**	**80**
								+/- 28
1997	128	2,104	4,148	4,892	97	536	**11,777**	**92**
1998	95	1,568	1,725	3,778	2,735	177	**9,933**	**105**
1999	85	2,022	1,261	3,259	8	530	**7,072**	**83**
2000	91	1,331	1,090	3,674	917	72	**7,084**	**78**
2001	102	2,052	1,146	3,936	41	94	**7,269**	**71**
2002	78	646	1,438	915	1,931	1,091	**6,021**	**77**
2003	75	804	1,142	2,551	55	1,512	**6,064**	**81**
2004	72	356	763	1,823	790	660	**4,392**	**61**
2005	97	508	2,467	11,075	64	737	**14,851**	**153**
2006	117	690	2,424	1,111	1,843	147	**6,215**	**53**
2007	121	330	1,476	2,311	34	1,884	**6,035**	**50**
2008	166	304	2,660	2,732	946	4,499	**11,141**	**67**

Relationship between abundance of coho salmon in September and total marine survival

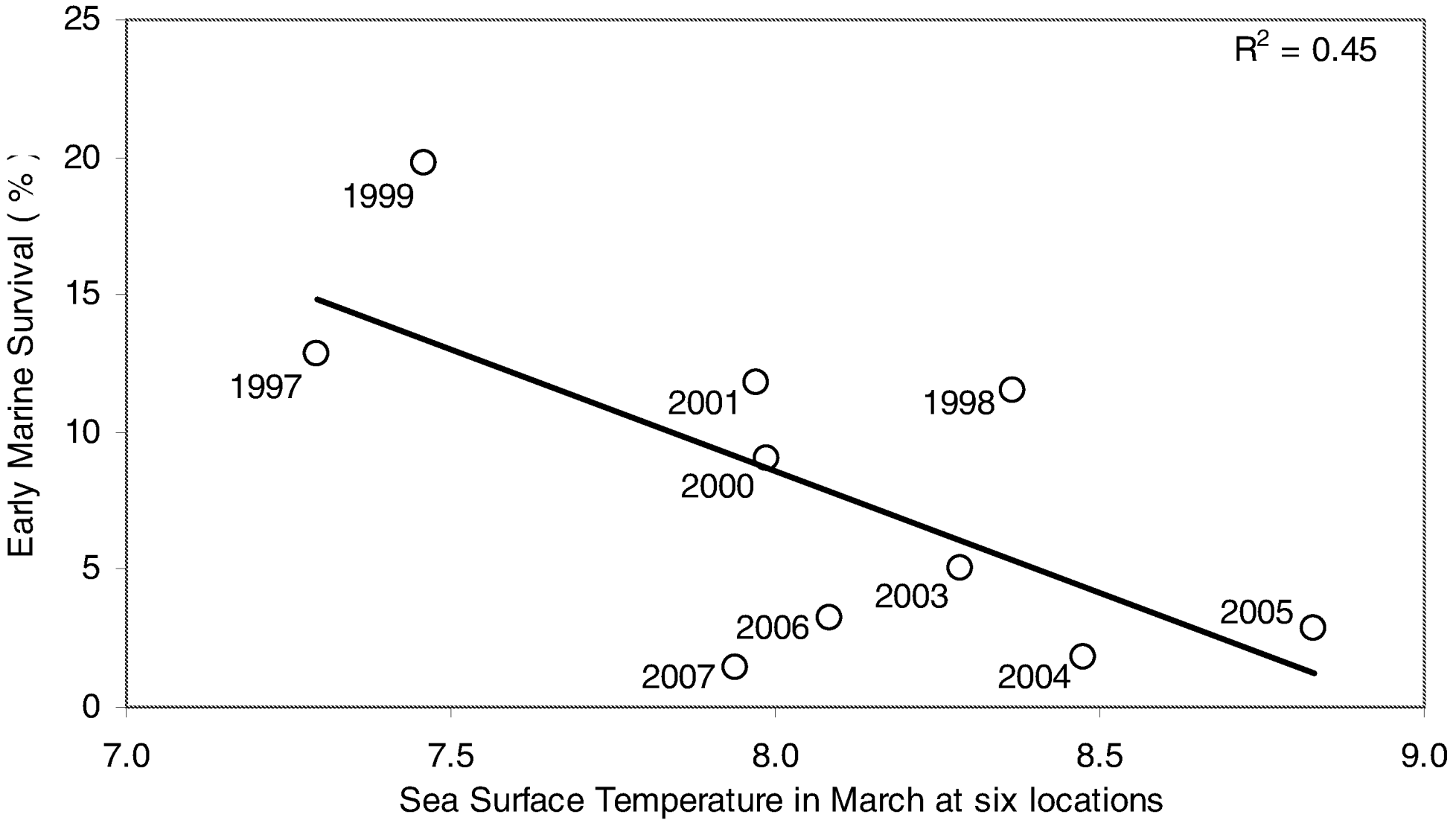


Early marine survival (May to September) of coho salmon in the Strait of Georgia

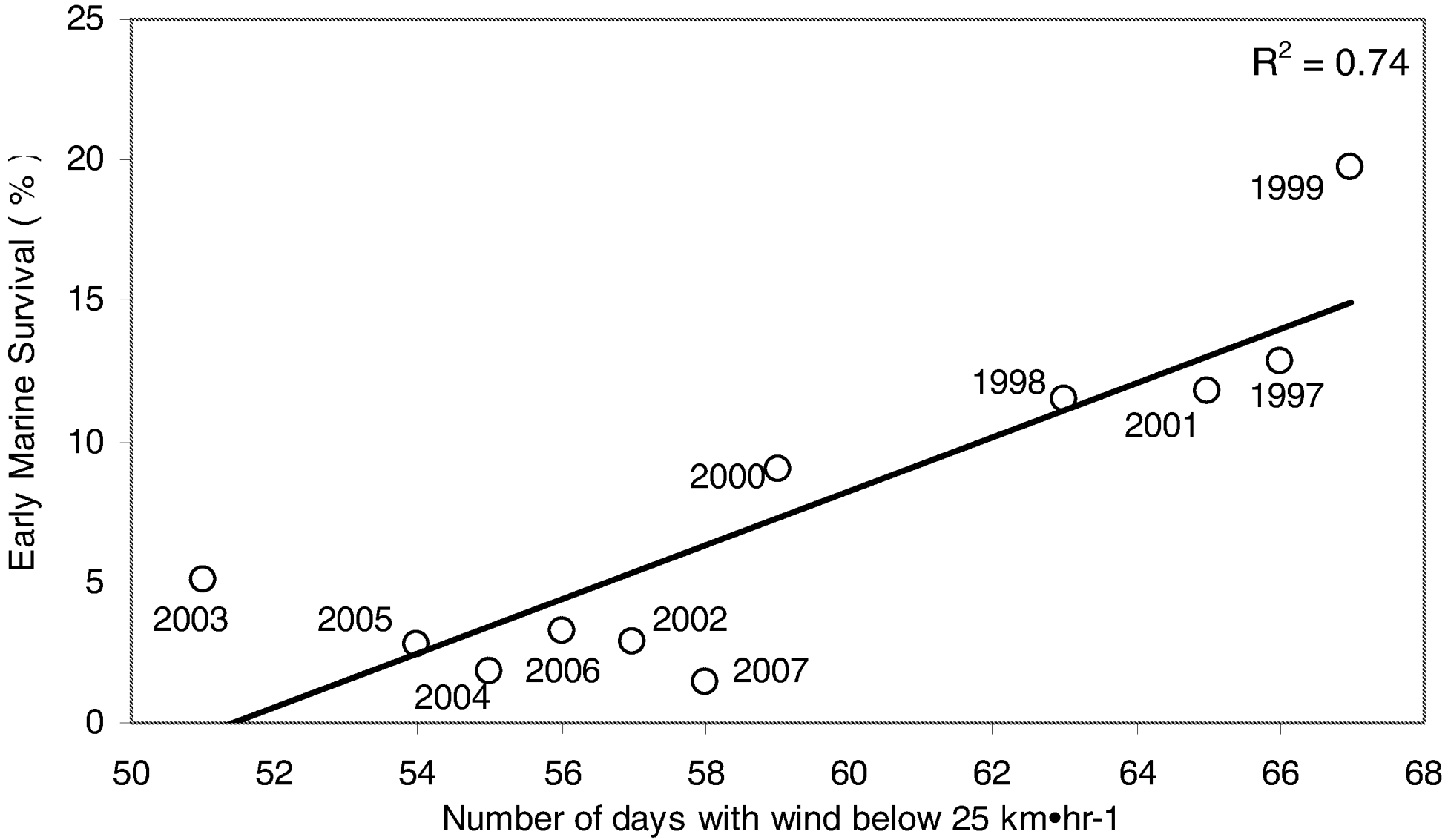


CAN185453_0008

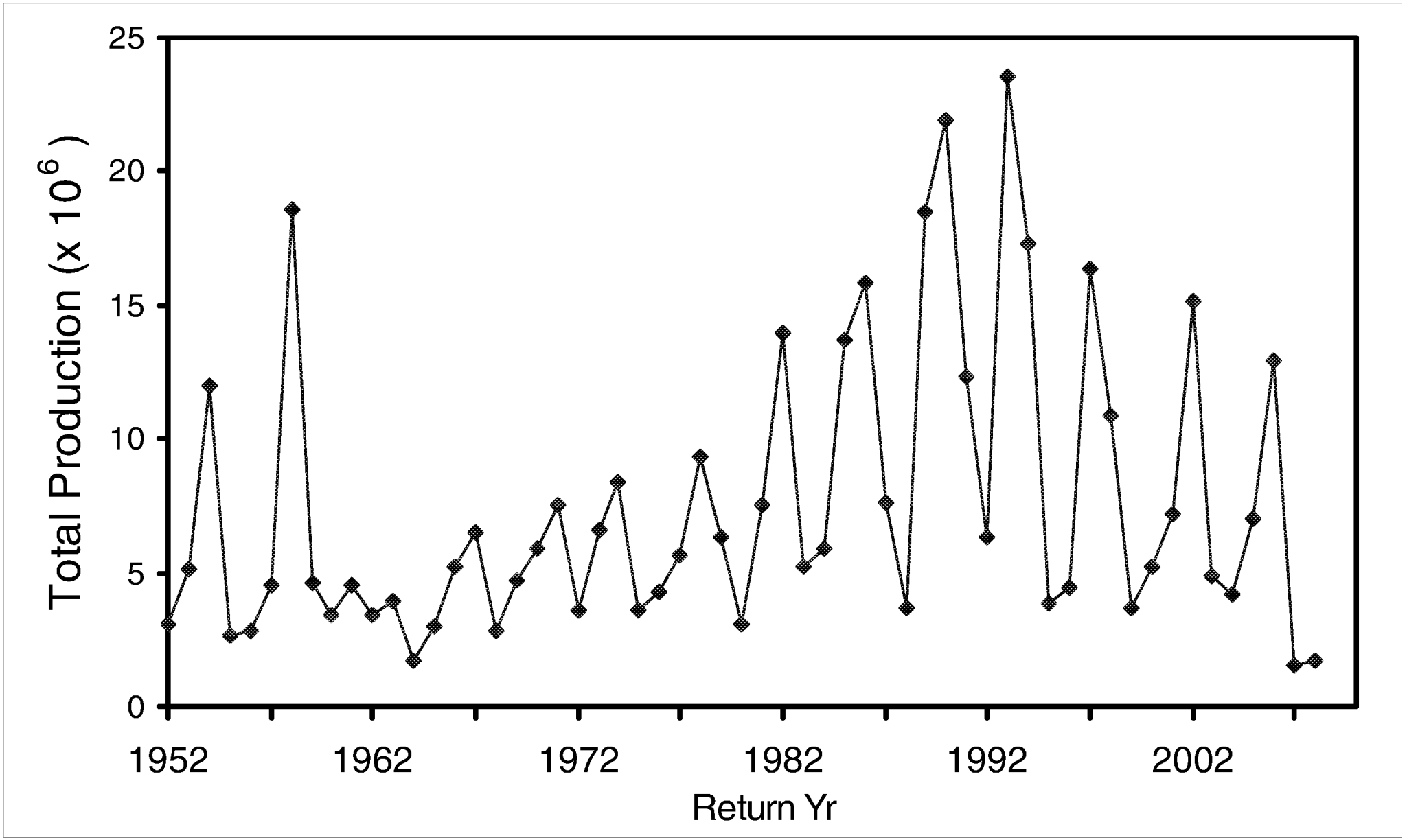
Relationship between sea surface temperature and early marine survival of coho salmon



Relationship between winds in May, June and July and early marine survival of coho salmon



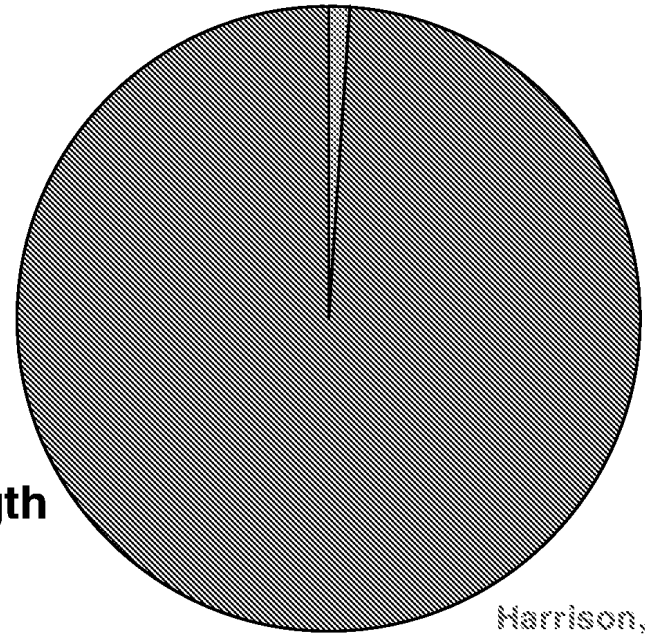
Total production of sockeye salmon from the Fraser River, 1952-2008



Catch Per Unit Effort (CPUE) of sockeye salmon in the Strait of Georgia, July and September, 1997-2009

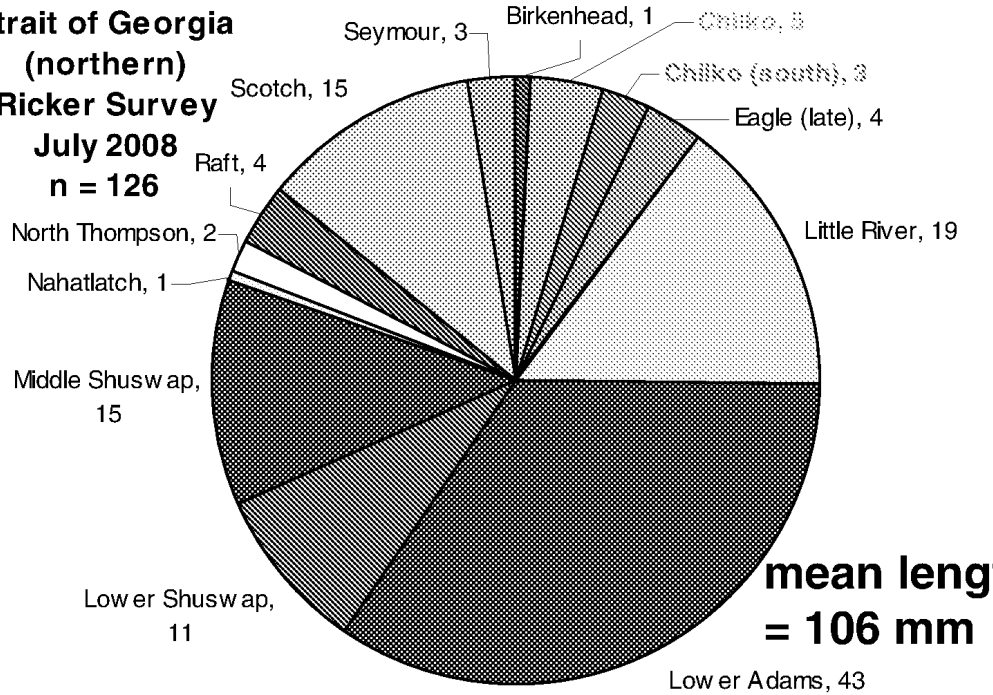
Year	July	Sept
1997	105.7	4.2
1998	20.9	1.9
1999	22.2	6.2
2000	9.0	0.8
2001	32.8	0.9
2002	6.2	14.0
2003	-	20.2
2004	63.3	9.2
2005	11.9	7.6
2006	5.9	1.3
2007	2.5	15.6
2008	49.3	27.1
2009	52.1	15.0

Howe Sound Ricker Survey July 2008 n = 89



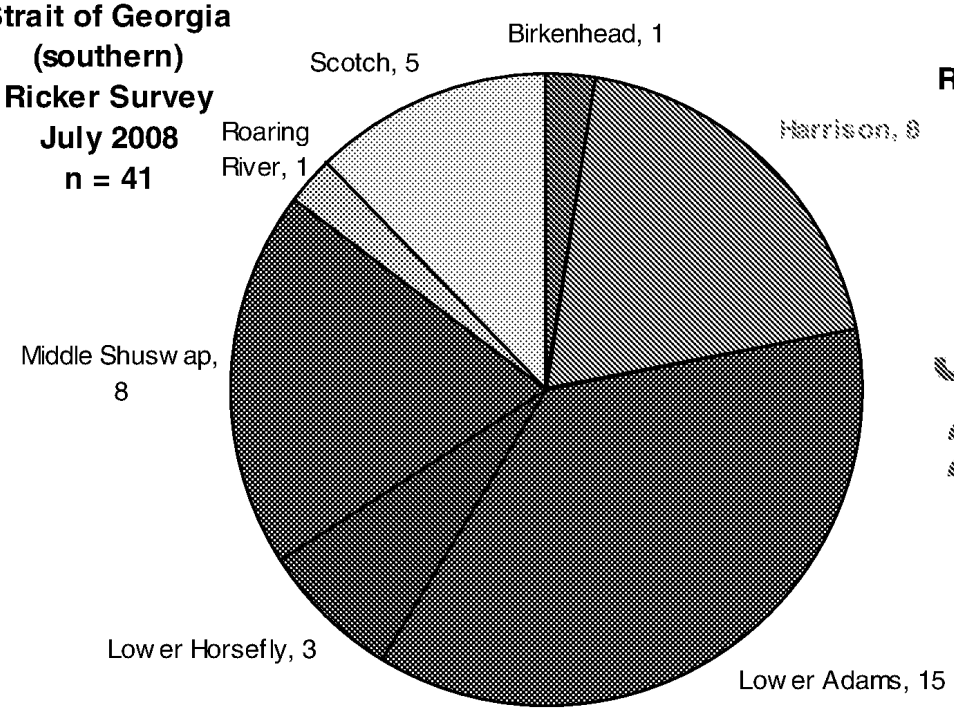
mean length = 67 mm

Strait of Georgia (northern) Ricker Survey July 2008 n = 126

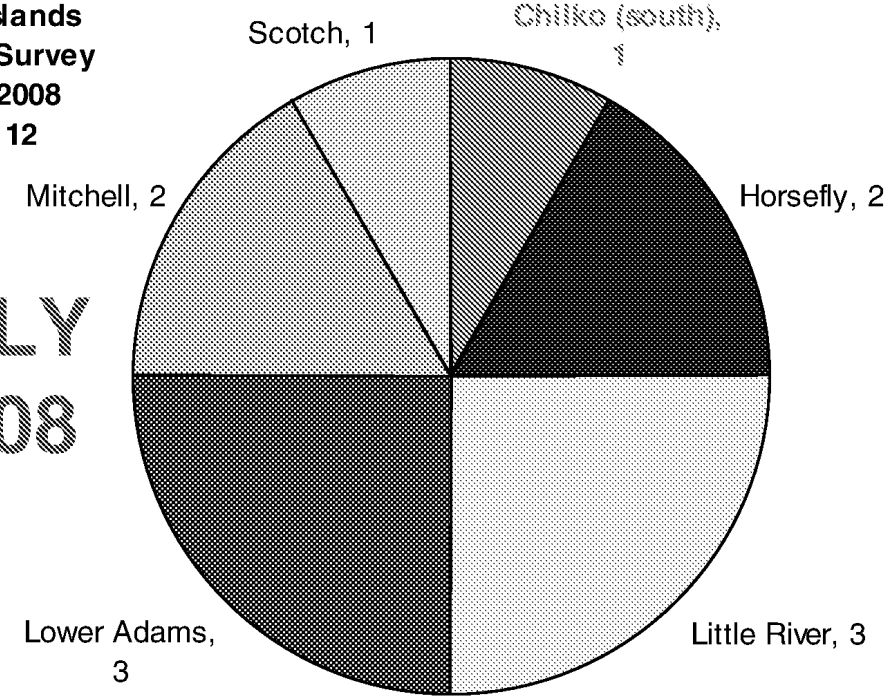


mean length = 106 mm

Strait of Georgia (southern) Ricker Survey July 2008 n = 41



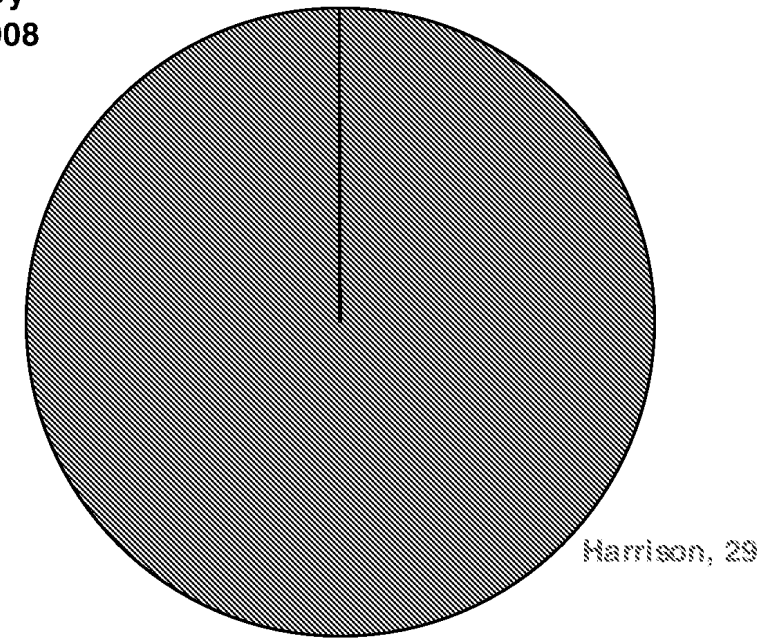
Gulf Islands Ricker Survey July 2008 n = 12



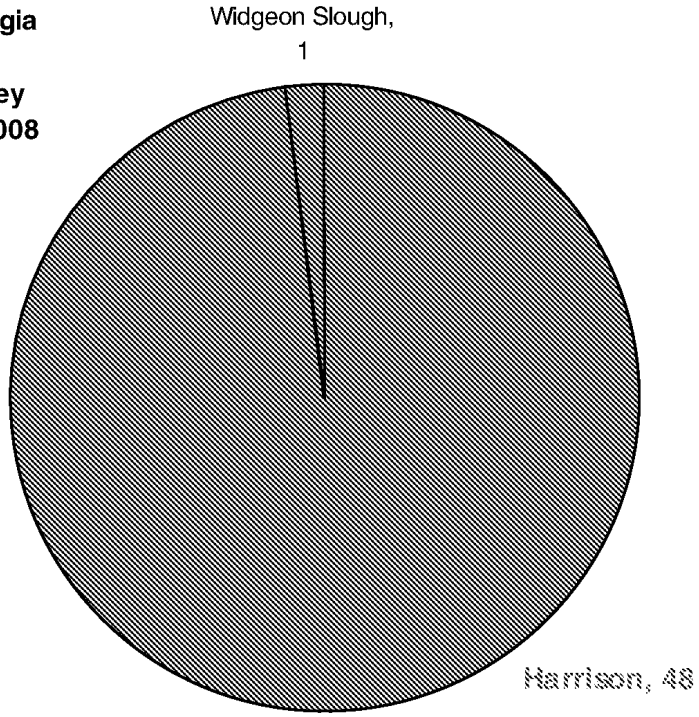
JULY 2008

CAN185453_0013

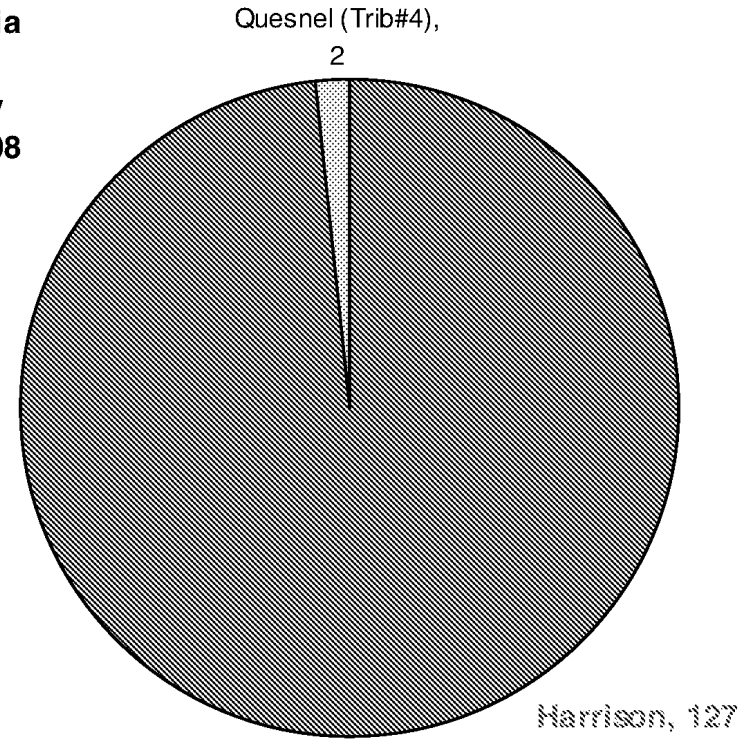
Malaspina
Ricker Survey
September 2008
n = 29



Strait of Georgia
(northern)
Ricker Survey
September 2008
n = 49



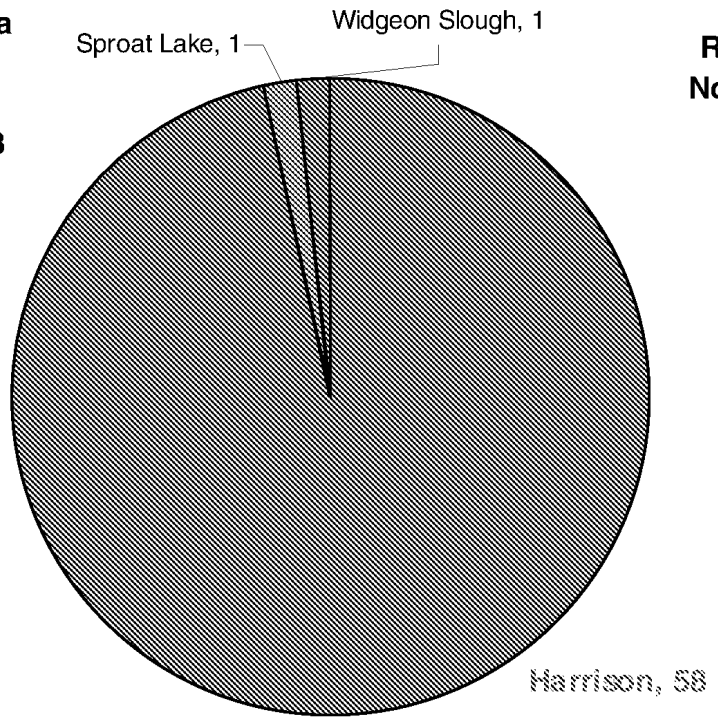
Strait of Georgia
(southern)
Ricker Survey
September 2008
n = 129



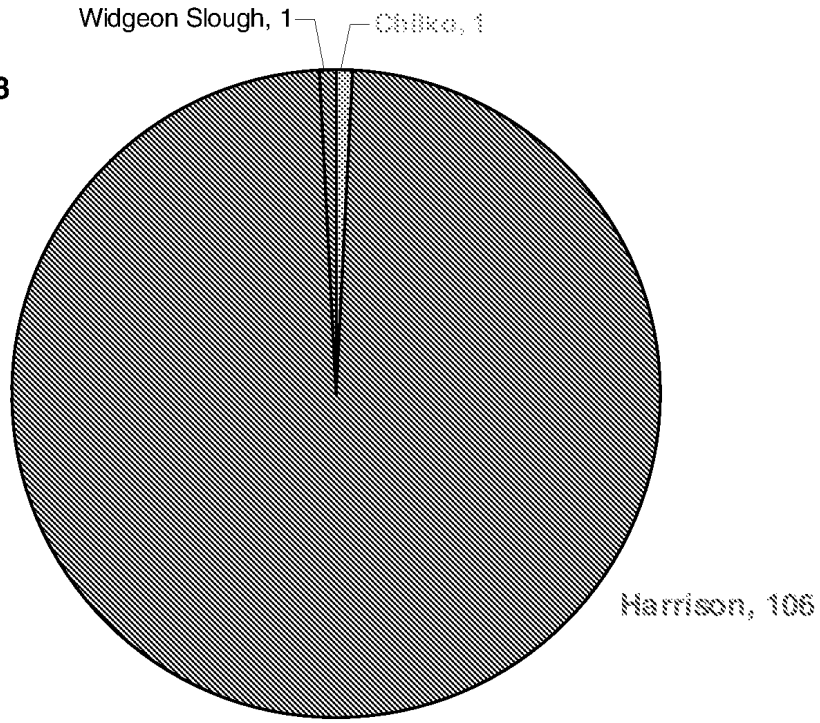
SEPTEMBER 2008

CAN185453_0014

Strait of Georgia (southern) Ricker Survey November 2008 n = 60

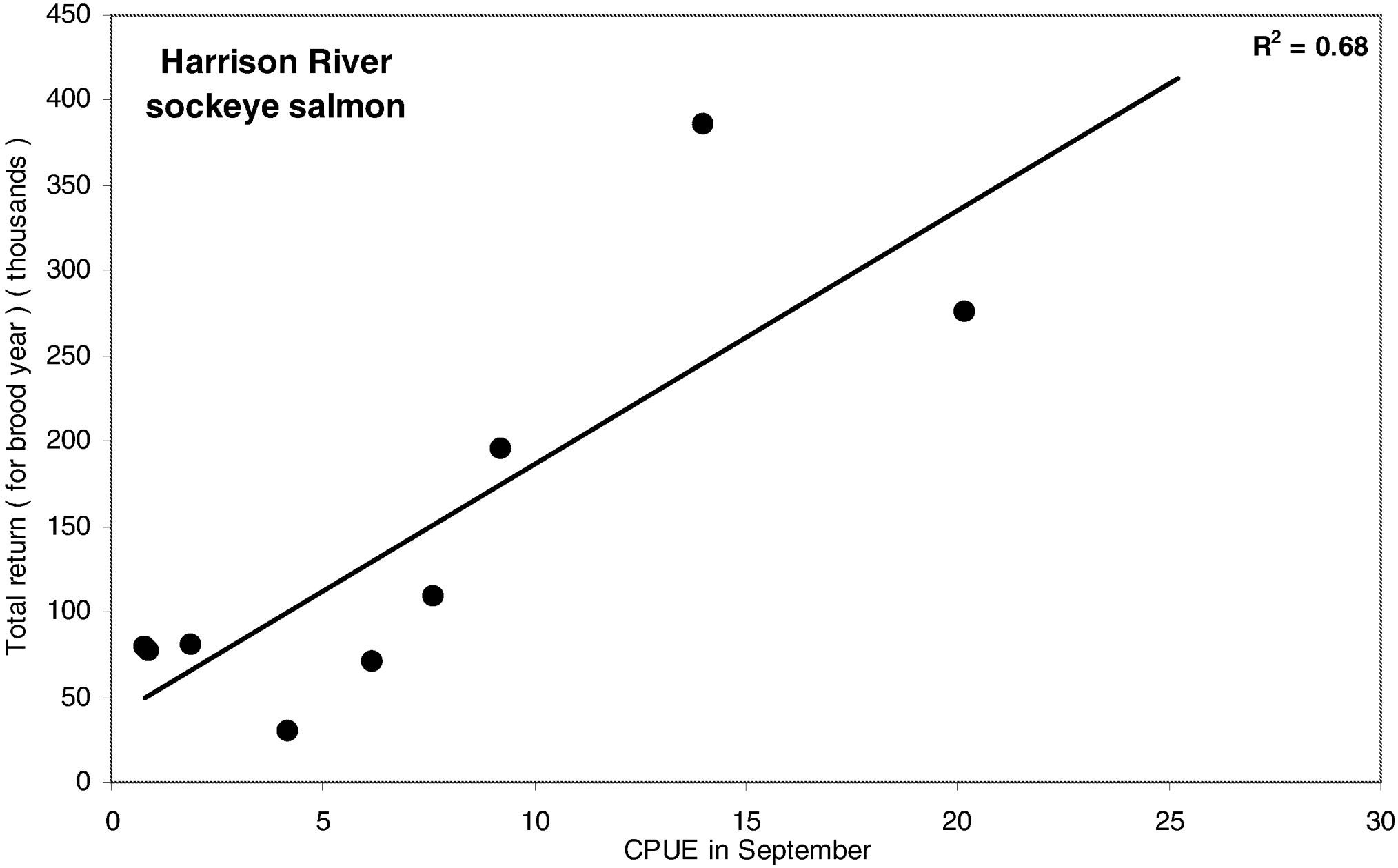


Gulf Islands Ricker Survey November 2008 n = 108



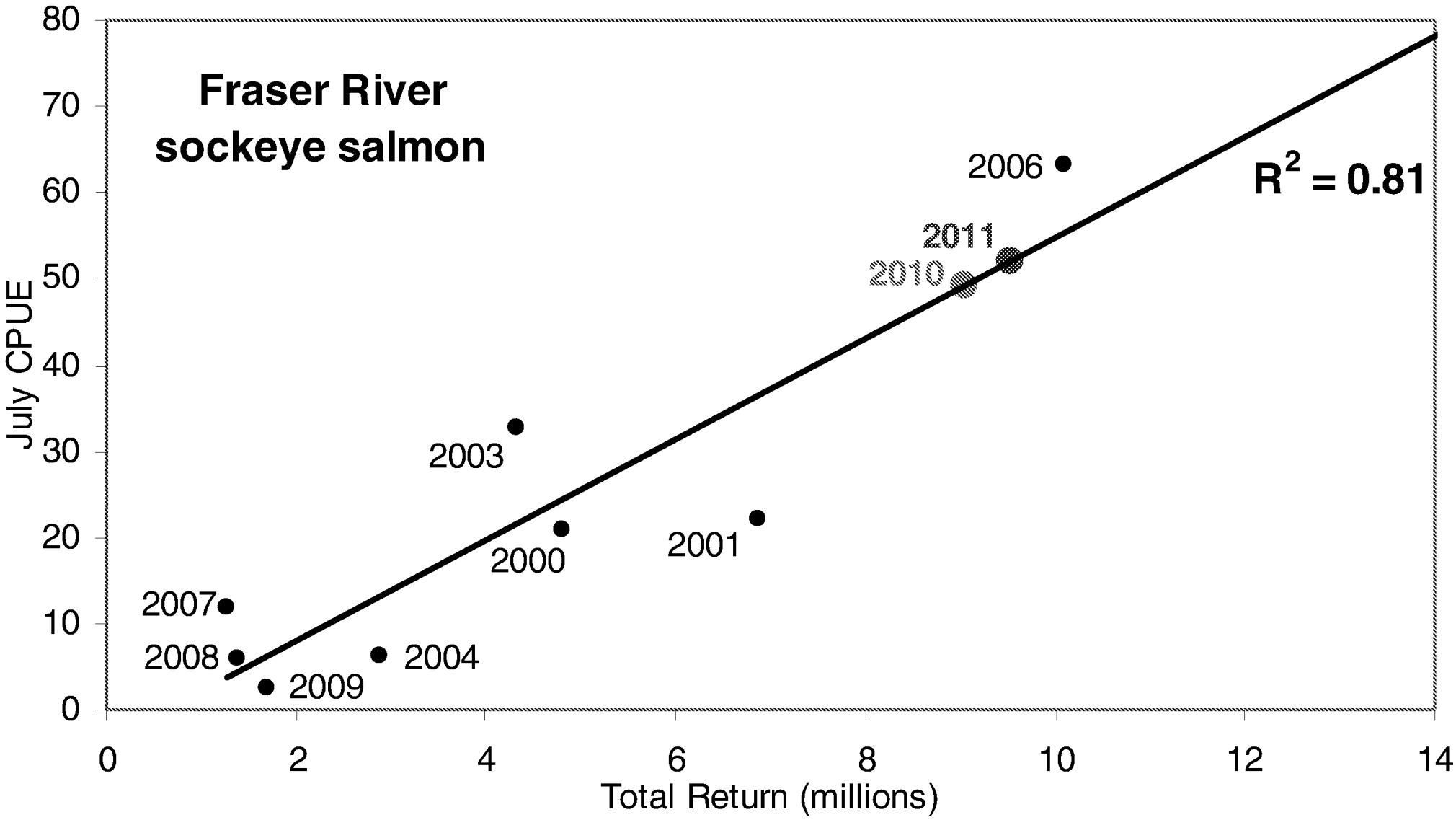
NOVEMBER 2008

Relationship between CPUE of sockeye salmon in September and the total return of sockeye salmon to the Harrison River



CAN185453_0016

Relationship between CPUE of sockeye salmon in July and the total return of sockeye salmon to the Fraser River, including predictions for 2010 and 2011



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