Table S1. List of samples.

ID	Strata/sampling location	Origin	Sampling event, sequential number	Social Status (1 = females and young (of both sexes); 2 = adult male; 3 = "the others" including subadult males, individuals of unknown sex and males of unknown size)	Sex	MtDNA Use (1 = used in this study, 3 = failed or no DNA left)	Msat Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	SNP Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	Source (Listed by Institution, please see acknowledgements for names of contributers)
27952	Alaska_Aleutians	wild	72	2	M	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
27953	Alaska_Aleutians	wild	73	2	M	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
27954	Alaska_Aleutians	wild	74	2	M	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
28556	Alaska_Aleutians	wild	78	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
28557	Alaska_Aleutians	wild	78	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
28558	Alaska_Aleutians	wild	79	2	M	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
28559	Alaska_Aleutians	wild	80	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
28560	Alaska_Aleutians	wild	81	2	M	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
35977	Alaska_Aleutians	wild	99	2	fail	1	1	3	Alaska Fisheries Science Center, NMFS, NOAA
57917	Alaska_Aleutians	wild	124	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
67389	Alaska_Aleutians	stranding	138	2	M	1	1	3	Izembek National Wildlife Refuge, US Fish and Wildlife Service
4848	Alaska_Gulf of Alaska	stranding	11	2	M	1	1	1	University of Alaska, Fairbanks
10399	Alaska_Gulf of Alaska	following longliner	37	2	M	1	1	1	North Gulf oceanic Society
10400	Alaska_Gulf of Alaska	following longliner	37	2	M	1	1	1	North Gulf oceanic Society
25514	Alaska_Gulf of Alaska	stranding	70	1	F	1	1	1	University of Alaska, Fairbanks
28393	Alaska_Gulf of Alaska	wild	75	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
28399	Alaska_Gulf of Alaska	wild	76	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
28411	Alaska_Gulf of Alaska	wild	77	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
34557	Alaska_Gulf of Alaska	following longliner	95	2	M	1	1	1	University of Alaska, Southeast
34558	Alaska_Gulf of Alaska	following longliner	95	2	M	1	1	1	University of Alaska, Southeast
34559	Alaska_Gulf of Alaska	following longliner	95	2	M	1	1	1	University of Alaska, Southeast
34562	Alaska_Gulf of Alaska	following longliner	95	2	M	1	1	1	University of Alaska, Southeast
35339	Alaska_Gulf of Alaska	wild	96	2	M	1	3	1	Alaska Fisheries Science Center, NMFS, NOAA
35340	Alaska_Gulf of Alaska	wild	97	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
41462	Alaska_Gulf of Alaska	wild	103	2	M	1	1	1	University of Alaska, Southeast
41492	Alaska_Gulf of Alaska	wild	104	2	M	1	1	1	University of Alaska, Southeast
43541	Alaska_Gulf of Alaska	wild	105	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
43542	Alaska_Gulf of Alaska	wild	105	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
43543	Alaska_Gulf of Alaska	wild	105	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
43544	Alaska_Gulf of Alaska	wild	105	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
43749	Alaska_Gulf of Alaska	wild	106	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
43750	Alaska_Gulf of Alaska	wild	107	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
44015	Alaska_Gulf of Alaska	following longliner	108	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
44016	Alaska_Gulf of Alaska	following longliner	108	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA (SPLASH)
45756	Alaska_Gulf of Alaska	wild	110	2	M	1	1	1	University of Alaska, Southeast
45757	Alaska_Gulf of Alaska	wild	111	2	M	1	1	1	University of Alaska, Southeast
45758	Alaska_Gulf of Alaska	wild	112	2	M	1	1	1	University of Alaska, Southeast
46056	Alaska_Gulf of Alaska	stranding	115	2	M	1	3	3	University of Alaska Museum
52892	Alaska_Gulf of Alaska	following longliner	120	2	M	1	1	1	University of Alaska, Southeast (SPLASH)
60878	Alaska_Gulf of Alaska	following longliner	132	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
60879	Alaska_Gulf of Alaska	following longliner	133	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
60880	Alaska_Gulf of Alaska	following longliner	133	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
67880	Alaska_Gulf of Alaska	following longliner	139	2	M	1	1	1	University of Alaska, Southeast
68973	Alaska_Gulf of Alaska	stranding	140	3	M	1	1	1	Alaska SeaLife Center

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75	California Current	stranding	1	1	M	1	1	1	Los Angeles County Museum
2181	California Current	fishery	2	2	M	1	1	1	Fishery Observer Program (SWFSC and SWR)
2364	California Current	stranding	3	1	F	1	1	1	Los Angeles County Museum
2365	California Current	stranding	4	1	M	1	1	3	Los Angeles County Museum
5607	California Current	stranding	12	2	M	1	3	3	Los Angeles County Museum
5753	California Current	wild	13	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
5754	California Current	wild	13	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
6181	California Current	wild	14	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
6223	California Current	wild	15	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
6275	California Current	wild	16	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7644	California Current	stranding	23	1	M	1	1	1	The Marine Mammal Center
8518	California Current	stranding	25	1	F	1	1	1	Oregon Institute of Marine Biology
8624	California Current	wild	26	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
8625	California Current	wild	27	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
8626	California Current	wild	27	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
8627	California Current	wild	28	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
8629	California Current	wild	29	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11218	California Current	stranding	40	1	F	1	3	3	Cowan Vertebrate Museum
11219	California Current	stranding	41	2	fail	1	3	3	Cowan Vertebrate Museum
12147	California Current	fishery	50	1	M	1	1	1	Fishery Observer Program (SWFSC and SWR)
13968	California Current	stranding	52	1	F	1	1	1	University of British Columbia
16574	California Current	stranding	62	1	F	1	1	1	Cascadia Research Collective
17131	California Current	wild	63	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
17856	California Current	stranding	64	2	M	1	3	3	Humboldt State University
25354	California Current	wild	65	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25355	California Current	wild	65	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25356	California Current	wild	66	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25357	California Current	wild	66	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25358	California Current	wild	67	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25359	California Current	wild	67	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25360	California Current	wild	67	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
25387	California Current	wild	68	2	M	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
25442	California Current	wild	69	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
26276	California Current	wild	71	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
29876	California Current	stranding	82	2	M	1	1	3	Cascadia Research Collective
29878	California Current	stranding	83	1	F	1	1	1	Cascadia Research Collective
33725	California Current	stranding	94	1	F	1	1	1	Oregon Institute of Marine Biology
37274	California Current	wild	100	2	fail	1	3	3	Moss Landing Marine Laboratory
38992	California Current	stranding	102	2	M	1	3	3	Fishery Observer Program (SWFSC and SWR)
44083	California Current	stranding	109	1	M	1	3	1	The Marine Mammal Center
51415	California Current	wild	119	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51416	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51417	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51418	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51419	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA

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51420	California Current	wild	119	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51421	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51422	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51423	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
51424	California Current	wild	119	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
65374	California Current	stranding	135	1	F	1	3	3	Santa Barbara Museum of Natural History
70562	California Current	stranding	147	2	M	1	3	3	Moss Landing Marine Laboratory
7546	Hawaii	wild	17	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7547	Hawaii	wild	18	1	F	1	3	1	Southwest Fisheries Science Center, NMFS, NOAA
7548	Hawaii	wild	18	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9712	Hawaii	stranding	35	1	F	1	1	1	Hawaii Stranding Program, NMFS, NOAA
30408	Hawaii	wild	84	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30410	Hawaii	wild	84	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30421	Hawaii	wild	85	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30422	Hawaii	wild	85	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30431	Hawaii	wild	86	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30434	Hawaii	wild	87	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30466	Hawaii	wild	88	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30467	Hawaii	wild	88	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30472	Hawaii	wild	89	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30473	Hawaii	wild	89	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30482	Hawaii	wild	90	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30486	Hawaii	wild	91	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30488	Hawaii	wild	92	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
35875	Hawaii	wild	98	1	F	1	1	1	Cascadia Research Collective
45946	Hawaii	wild	113	1	F	1	1	1	Cascadia Research Collective
45991	Hawaii	wild	114	1	M	1	1	1	Cascadia Research Collective
45992	Hawaii	wild	114	1	F	1	1	1	Cascadia Research Collective
55200	Hawaii	wild	121	1	M	1	1	1	Cascadia Research Collective
55201	Hawaii	wild	121	1	F	1	1	1	Cascadia Research Collective
55207	Hawaii	wild	122	1	F	1	1	1	Cascadia Research Collective
55208	Hawaii	wild	122	1	F	1	1	1	Cascadia Research Collective
55211	Hawaii	wild	123	1	F	1	1	1	Cascadia Research Collective
61439	Hawaii	wild	134	1	F	1	1	1	Cascadia Research Collective
61440	Hawaii	wild	134	1	F	1	1	3	Cascadia Research Collective
4034	Eastern tropical Pacific	mass stranding	5	1	F	1	1	1	Universidad Autónoma de Baja California Sur
4035	Eastern tropical Pacific	mass stranding	5	1	F	1	1	1	Universidad Autónoma de Baja California Sur
4633	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4634	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4635	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4636	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4637	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4638	Eastern tropical Pacific	wild	7	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4639	Eastern tropical Pacific	wild	8	3	fail	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4648	Eastern tropical Pacific	wild	9	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA

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4650	Eastern tropical Pacific	wild	9	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4651	Eastern tropical Pacific	wild	9	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4653	Eastern tropical Pacific	wild	10	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4654	Eastern tropical Pacific	wild	10	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
8502	Eastern tropical Pacific	wild	24	1	F	1	1	1	Oregon State University/Pacific Islands Science Center, NMFS, NOAA
9570	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9571	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9572	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9574	Eastern tropical Pacific	wild	30	1	F	1	3	1	Southwest Fisheries Science Center, NMFS, NOAA
9575	Eastern tropical Pacific	wild	30	1	F	1	3	1	Southwest Fisheries Science Center, NMFS, NOAA
9576	Eastern tropical Pacific	wild	30	1	F	1	3	1	Southwest Fisheries Science Center, NMFS, NOAA
9577	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9578	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9579	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9580	Eastern tropical Pacific	wild	30	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9581	Eastern tropical Pacific	wild	31	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9582	Eastern tropical Pacific	wild	31	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9584	Eastern tropical Pacific	wild	32	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9585	Eastern tropical Pacific	wild	32	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9586	Eastern tropical Pacific	wild	32	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9587	Eastern tropical Pacific	wild	32	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9588	Eastern tropical Pacific	wild	33	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9589	Eastern tropical Pacific	wild	33	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9591	Eastern tropical Pacific	wild	33	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9592	Eastern tropical Pacific	wild	33	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
9594	Eastern tropical Pacific	mass stranding	5	3	M	1	1	1	Universidad Autónoma de Baja California Sur
9595	Eastern tropical Pacific	mass stranding	5	1	F	1	1	1	Universidad Autónoma de Baja California Sur
9598	Eastern tropical Pacific	stranding	34	2	M	1	1	1	Universidad Autónoma de Baja California Sur
10068	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10072	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10075	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10076	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10740	Eastern tropical Pacific	wild	38	1	fail	1	3	1	Dalhousie University
10742	Eastern tropical Pacific	wild	36	1	fail	1	3	3	Dalhousie University
10912	Eastern tropical Pacific	wild	39	1	F	1	3	1	Dalhousie University
10914	Eastern tropical Pacific	wild	39	1	F	1	3	1	Dalhousie University
10915	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10916	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
10917	Eastern tropical Pacific	wild	36	1	F	1	3	1	Dalhousie University
11560	Eastern tropical Pacific	wild	45	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11561	Eastern tropical Pacific	wild	45	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11571	Eastern tropical Pacific	wild	46	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11572	Eastern tropical Pacific	wild	46	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11573	Eastern tropical Pacific	wild	46	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11574	Eastern tropical Pacific	wild	46	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA

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11575	Eastern tropical Pacific	wild	46	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12022	Eastern tropical Pacific	wild	47	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12023	Eastern tropical Pacific	wild	47	1	F	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12024	Eastern tropical Pacific	wild	47	1	M	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12025	Eastern tropical Pacific	wild	47	1	F	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12032	Eastern tropical Pacific	wild	48	3	M	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12033	Eastern tropical Pacific	wild	48	3	M	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12034	Eastern tropical Pacific	wild	48	3	M	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
12058	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12059	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12060	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12061	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12062	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12063	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12064	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12065	Eastern tropical Pacific	wild	49	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
12066	Eastern tropical Pacific	wild	49	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
13371	Eastern tropical Pacific	wild	51	1	F	1	1	1	Dalhousie University
13372	Eastern tropical Pacific	wild	51	1	F	1	3	1	Dalhousie University
13374	Eastern tropical Pacific	wild	51	1	F	1	1	3	Dalhousie University
13375	Eastern tropical Pacific	wild	51	1	F	1	3	1	Dalhousie University
13377	Eastern tropical Pacific	wild	51	1	F	1	1	1	Dalhousie University
13379	Eastern tropical Pacific	wild	51	2	M	1	1	1	Dalhousie University
15042	Eastern tropical Pacific	wild	53	2	M	1	1	1	Centro Interdisciplinario de Ciencias Marinas, Instituto Politecnico Nacional
15067	Eastern tropical Pacific	wild	54	1	F	1	1	1	Centro Interdisciplinario de Ciencias Marinas, Instituto Politecnico Nacional
15096	Eastern tropical Pacific	wild	55	2	M	1	1	3	Centro Interdisciplinario de Ciencias Marinas, Instituto Politecnico Nacional
15966	Eastern tropical Pacific	wild	57	2	fail	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15973	Eastern tropical Pacific	wild	58	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15974	Eastern tropical Pacific	wild	58	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15975	Eastern tropical Pacific	wild	58	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15977	Eastern tropical Pacific	wild	58	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15978	Eastern tropical Pacific	wild	58	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15979	Eastern tropical Pacific	wild	58	1	F	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
16061	Eastern tropical Pacific	wild	59	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16062	Eastern tropical Pacific	wild	59	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16063	Eastern tropical Pacific	wild	59	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16084	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16085	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16086	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16088	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16089	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16090	Eastern tropical Pacific	wild	60	1	fail	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16091	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16092	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16093	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA

ID	Strata/sampling location	Origin	Sampling event, sequential number	Social Status (1 = females and young (of both sexes); 2 = adult male; 3 = "the others" including subadult males, individuals of unknown sex and males of unknown size)	Sex	MtDNA Use (1 = used in this study, 3 = failed or no DNA left)	Msat Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	SNP Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	Source (Listed by Institution, please see acknowledgements for names of contributers)
16095	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16097	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16098	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16099	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16100	Eastern tropical Pacific	wild	60	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
60597	Eastern tropical Pacific	wild	125	2	M	1	1	1	Dalhousie University
60598	Eastern tropical Pacific	wild	126	2	M	1	3	3	Dalhousie University
60599	Eastern tropical Pacific	wild	126	2	M	1	1	1	Dalhousie University
60600	Eastern tropical Pacific	wild	127	2	M	3	1	3	Dalhousie University
60601	Eastern tropical Pacific	wild	128	2	M	1	1	1	Dalhousie University
60602	Eastern tropical Pacific	wild	129	2	fail	1	1	1	Dalhousie University
60603	Eastern tropical Pacific	wild	130	2	M	1	1	3	Dalhousie University
60604	Eastern tropical Pacific	wild	131	2	M	1	1	1	Dalhousie University
66728	Eastern tropical Pacific	wild	136	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
66731	Eastern tropical Pacific	wild	136	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
70555	strata unknown / sampled near Kuril Islands, Russia	wild	141	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
70556	strata unknown / sampled near Kuril Islands, Russia	wild	142	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
70557	strata unknown / sampled near Kuril Islands, Russia	wild	143	2	M	1	3	1	Alaska Fisheries Science Center, NMFS, NOAA
70558	strata unknown / sampled near Kuril Islands, Russia	wild	144	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
70559	strata unknown / sampled near Kuril Islands, Russia	wild	145	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
70560	strata unknown / sampled near Kuril Islands, Russia	wild	146	2	M	1	1	1	Alaska Fisheries Science Center, NMFS, NOAA
49068	strata unknown / sampled near Palmyra Atoll	wild	116	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
49069	strata unknown / sampled near Palmyra Atoll	wild	116	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
49093	strata unknown / sampled near Palmyra Atoll	wild	117	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
49094	strata unknown / sampled near Palmyra Atoll	wild	118	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7579	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7580	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7581	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7582	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7584	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7585	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7586	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7587	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7588	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7589	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7593	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7594	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7595	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7596	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7598	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	19	1	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7600	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	20	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7601	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	20	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7603	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	21	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7604	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	21	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
7606	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	22	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA

ID	Strata/sampling location	Origin	Sampling event, sequential number	Social Status (1 = females and young (of both sexes); 2 = adult male; 3 = "the others" including subadult males, individuals of unknown sex and males of unknown size)	Sex	MtDNA Use (1 = used in this study, 3 = failed or no DNA left)	Msat Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	SNP Use (1 = used in this study, 3 = failed, no DNA left, or not genotyped)	Source (Listed by Institution, please see acknowledgements for names of contributers)
7607	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	22	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11472	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	floating dead	42	3	fail	1	3	3	Southwest Fisheries Science Center, NMFS, NOAA
11485	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	43	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
16186	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	61	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
30505	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	93	1	fail	1	3	3	Southwest Fisheries Science Center, NMFS, NOAA
30506	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	93	1	U	1	1	3	Southwest Fisheries Science Center, NMFS, NOAA
37895	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	101	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
67190	strata unknown, sampled in waters between the eastern tropical Pacific and Hawaii/Palmyra	wild	137	2	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
4628	strata unknown, sampled along the west coast of Baja California	wild	6	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11535	strata unknown, sampled along the west coast of Baja California	wild	44	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11536	strata unknown, sampled along the west coast of Baja California	wild	44	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11537	strata unknown, sampled along the west coast of Baja California	wild	44	3	M	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
11538	strata unknown, sampled along the west coast of Baja California	wild	44	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15872	strata unknown, sampled along the west coast of Baja California	wild	56	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15873	strata unknown, sampled along the west coast of Baja California	wild	56	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15874	strata unknown, sampled along the west coast of Baja California	wild	56	1	fail	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15876	strata unknown, sampled along the west coast of Baja California	wild	56	1	F	1	1	1	Southwest Fisheries Science Center, NMFS, NOAA
15877	strata unknown, sampled along the west coast of Baja California	wild	56	1	F	3	1	1	Southwest Fisheries Science Center, NMFS, NOAA

Table S2. Groups sampled

Sampling event, sequential number	Strata/sampling location	Estimated group size (range)	Number of samples collected in the field	Number of unique individuals sampled	SEX RATIO (female, male, unknown)
72	Alaska_Aleutians	(1-3)	1	1	0,1,0
73	Alaska_Aleutians	(1-3)	1	1	0,1,0
74	Alaska_Aleutians	(1-3)	1	1	0,1,0
78	Alaska_Aleutians	(3)	2	2	0,2,0
79	Alaska_Aleutians	(1)	1	1	0,1,0
80	Alaska_Aleutians	(1-2)	1	1	0,1,0
81	Alaska_Aleutians	(1-2)	1	1	0,1,0
99	Alaska_Aleutians	(1)	1	1	0,1,0
124	Alaska_Aleutians	(1)	1	1	0,1,0
138	Alaska_Aleutians	N/A	1	1	0,1,0
11	Alaska_Gulf of Alaska	N/A	1	1	0,1,0
37	Alaska_Gulf of Alaska	(4)	2	2	0,2,0
70	Alaska_Gulf of Alaska	N/A	1	1	1,0,0
75	Alaska_Gulf of Alaska	(1-2)	1	1	0,1,0
76	Alaska_Gulf of Alaska	(1)	1	1	0,1,0
77	Alaska_Gulf of Alaska	(1)	1	1	0,1,0
95	Alaska_Gulf of Alaska	(5-7)	9	4	0,4,0
96	Alaska_Gulf of Alaska	(1-2)	1	1	0,1,0
97	Alaska_Gulf of Alaska	(1-2)	1	1	0,1,0
103	Alaska_Gulf of Alaska	(1-3)	1	1	0,1,0
104	Alaska_Gulf of Alaska	(1-3)	1	1	0,1,0
105	Alaska_Gulf of Alaska	(1-3)	4	4	0,4,0
106	Alaska_Gulf of Alaska	(2)	1	1	0,1,0
107	Alaska_Gulf of Alaska	(3)	1	1	0,1,0
108	Alaska_Gulf of Alaska	(3)	2	2	0,2,0
110	Alaska_Gulf of Alaska	(1-4)	1	1	0,1,0
111	Alaska_Gulf of Alaska	(1-4)	1	1	0,1,0
112	Alaska_Gulf of Alaska	(1-4)	1	1	0,1,0
115	Alaska_Gulf of Alaska	N/A	1	1	0,1,0
120	Alaska_Gulf of Alaska	(2)	5	2 (1)	0,1,0
132	Alaska_Gulf of Alaska	(6)	1	1	0,1,0
133	Alaska_Gulf of Alaska	(5-7+)	2	2	0,2,0
139	Alaska_Gulf of Alaska	(3-4)	1	1	0,1,0
140	Alaska_Gulf of Alaska	N/A	1	1	0,1,0
1	California Current	N/A	1	1	0,1,0
2	California Current	N/A	1	1	0,1,0
3	California Current	N/A	1	1	1,0,0
4	California Current	N/A	1	1	0,1,0
12	California Current	N/A	1	1	0,1,0
13	California Current	(12-25)	3	2	0,2,0
14	California Current	(9-19)	1	1	1,0,0
15	California Current	(5-40)	1	1	0,1,0
16	California Current	(6-9)	1	1	0,1,0
23	California Current	N/A	1	1	0,1,0
25	California Current	N/A	1	1	1,0,0
26	California Current	(27)	1	1	0,1,0
27	California Current	(12)	2	2	1,1,0
28	California Current	(8)	1	1	1,0,0
29	California Current	(45)	1	1	1,0,0
40	California Current	N/A	1	1	1,0,0
41	California Current	N/A	1	1	0,1,0
50	California Current	N/A	1	1	0,1,0
52	California Current	N/A	1	1	1,0,0
62	California Current	N/A	1	1	1,0,0
63	California Current	(1)	1	1	0,1,0
64	California Current	N/A	1	1	0,0,1

65	California Current	(20-90)	2	2	2,0,0
66	California Current	(8-20)	2	2	1,1,0
67	California Current	(14-40)	3	3	2,1,0
68	California Current	(7-11)	1	1	0,1,0
69	California Current	(1)	1	1	0,1,0
71	California Current	(10-15)	1	1	0,1,0
82	California Current	N/A	1	1	0,1,0
83	California Current	N/A	1	1	1,0,0
94	California Current	N/A	1	1	1,0,0
100	California Current	(1)	1	1	0,1,0
102	California Current	N/A	1	1	0,1,0
109	California Current	N/A	1	1	0,1,0
119	California Current	(17-30)	11	10	8,2,0
135	California Current	N/A	1	1	1,0,0
147	California Current	N/A	1	1	0,1,0
17	Hawaii	(30)	2	1	1,0,0
18	Hawaii	(115-300)	2	2	2,0,0
35	Hawaii	N/A	1	1	1,0,0
84	Hawaii	(15-27)	3	2	2,0,0
85	Hawaii	(15-24)	3	2	1,1,0
86	Hawaii	(21-29)	1	1	1,0,0
87	Hawaii	(19-24)	1	1	1,0,0
88	Hawaii	(12-17)	2	2	2,0,0
89	Hawaii	(12-18)	3	2	2,0,0
90	Hawaii	(1-3)	1	1	0,1,0
91	Hawaii	(4-5)	2	1	0,1,0
92	Hawaii	(1-2)	1	1	0,1,0
98	Hawaii	?	1	1	1,0,0
113	Hawaii	(2)	1	1	1,0,0
114	Hawaii	(16)	2	2	1,1,0
121	Hawaii	(4)	2	2	1,1,0
122	Hawaii	(6)	3	2	2,0,0
123	Hawaii	(3)	1	1	1,0,0
134	Hawaii	(13)	2	2	2,0,0
5	Eastern tropical Pacific	N/A	8	4	3,1,0
7	Eastern tropical Pacific	(15-25)	6	6	6,0,0
8	Eastern tropical Pacific	(18-51)	3	1	0,0,1
9	Eastern tropical Pacific	(25)	5	3	0,3,0
10	Eastern tropical Pacific	(24)	2	2	2,0,0
24	Eastern tropical Pacific	N/A	1	1	1,0,0
30	Eastern tropical Pacific	4	11	10	10,0,0
31	Eastern tropical Pacific	(5)	3	2	2,0,0
32	Eastern tropical Pacific	(45-90)	4	4	4,0,0
33	Eastern tropical Pacific	(16)	6	4	4,0,0
34	Eastern tropical Pacific	N/A	1	1	0,1,0
36	Eastern tropical Pacific	N/A	18	8	7,0,1
38	Eastern tropical Pacific	N/A	1	1	0,0,1
39	Eastern tropical Pacific	?	4	2	2,0,0
45	Eastern tropical Pacific	N/A	2	2	2,0,0
46	Eastern tropical Pacific	(12-18)	7	5	4,1,0
47	Eastern tropical Pacific	(18-30)	4	4	3,1,0
48	Eastern tropical Pacific	(4-7)	3	3	0,3,0
49	Eastern tropical Pacific	(18-40)	9	9	8,1,0
51	Eastern tropical Pacific	(9)	11	6	5,1,0
53	Eastern tropical Pacific	?	1	1	0,1,0
54	Eastern tropical Pacific	?	1	1	1,0,0
55	Eastern tropical Pacific	?	1	1	0,1,0
57	Eastern tropical Pacific	(4-12)	1	1	0,1,0
58	Eastern tropical Pacific	(10-35)	7	6	5,1,0
59	Eastern tropical Pacific	(8-11)	3	3	0,3,0
60	Eastern tropical Pacific	(27-110)	17	14	13,0,1
125	Eastern tropical Pacific	(1)	1	1	0,1,0

126	Eastern tropical Pacific	(5)	2	2	0,2,0
127	Eastern tropical Pacific	(1)	1	1	0,1,0
128	Eastern tropical Pacific	(1)	1	1	0,1,0
129	Eastern tropical Pacific	(1)	1	1	0,1,0
130	Eastern tropical Pacific	(1-4)	1	1	0,1,0
131	Eastern tropical Pacific	(5)	1	1	0,1,0
136	Eastern tropical Pacific	(45-115)	4	2	1,1,0
141	strata unknown / sampled near Kuril Islands, Russia	(1-2+)	1	1	0,1,0
142	strata unknown / sampled near Kuril Islands, Russia	(1-2+)	1	1	0,1,0
143	strata unknown / sampled near Kuril Islands, Russia	(1)	1	1	0,1,0
144	strata unknown / sampled near Kuril Islands, Russia	(1)	1	1	0,1,0
145	strata unknown / sampled near Kuril Islands, Russia	(1)	1	1	0,1,0
146	strata unknown / sampled near Kuril Islands, Russia	(1)	1	1	0,1,0
116	strata unknown / sampled near Palmyra Atoll	(7-15)	2	2	2,0,0
117	strata unknown / sampled near Palmyra Atoll	(3-20)	1	1	1,0,0
118	strata unknown / sampled near Palmyra Atoll	(8-14)	1	1	1,0,0
19	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(20-75)	21	15	10,5,0
20	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(20-55)	3	2	2,0,0
21	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(25-110)	3	2	2,0,0
22	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(12-37)	2	2	1,1,0
42	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	N/A	1	1	0,1,0
43	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(2-6)	1	1	0,1,0
61	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(5-14)	1	1	0,1,0
93	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(10-17)	2	2	1,0,1
101	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(3)	2	1	0,1,0
137	strata unknown, sampled in waters between the eastern tropical Pacific and Hawai'i/Palmyra	(1)	1	1	0,1,0
6	strata unknown, sampled along the west coast of Baja California	(10-18)	1	1	0,1,0
44	strata unknown, sampled along the west coast of Baja California	(24-25)	4	4	2,2,0
56	strata unknown, sampled along the west coast of Baja California	(11-18)	6	5	4,0,1

Table S3. Microsatellite primer sets.

Primer name	Primer sequence	Citation
D17F	5’ TCAGCCTCTATAACGTCCTGAGC 3’	Buchanan *et al*. 1996
D17Rt	5’ GTTTCTTATGGGGACTGCCCTATATTAGTCAG 3’	
EV1A	5’ CCCTGCTCCCCATTCTC 3’	Valsecchi and Amos 1996
EV1Bt	5’GTTTCTTATAAACTCTAATACACTTCCTCCAAC 3’	
EV5A	5’ AGCTCCCTTAGACTCAACCTC 3’	Valsechhi and Amos 1996
EV5Bt	5’ GTTTCTTTATGGCGAGGGTTCG 3’	
SW10F	5’ ACCTAAGGATGGAGATG 3’	Richard *et al*. 1996
SW10Rt	5’ GTTTCTTATTTCCCAGGTCTGCAA 3’	
SW13F	5’ AGCTGTCTTAATGAAATTCCC 3’	Richard *et al*. 1996
SW13Rt	5’ GTTTCTTACGTAAATGATGCTGTT 3’	
SW19F	5’ GTAGTTTTCTTTAACAGTAATG 3’	Richard *et al*. 1996
SW19Rt	5’ GTTTCTTAGTTCTGGGCTTTTCACCTA 3’	

Note: The sequence “GTTTCTT” constitutes the reverse primer “tail” that reduces allelic stutter.

Table S4. Primers for all 36 SNP assays. Assay names include the locus name followed by the IUPAC code and the position (bp) of the SNP (e.g., CATR262 = CAT locus, SNP = R (A/G), position = bp 262 in the sequence). All assays have two allele-specific forward primers and one common reverse primer. Most assays also have a unique external (forward) primer to be used with the common reverse primer in the multiplex pre-amplification. Two sets of linked SNPs (CSF2, PmBH92) share one pair of pre-amplification primers for both SNPs in that locus: PmBH92 uses the common reverse primer from SNP Y172 with the external primer from SNP S122 for both assays, and CSF2 uses the two external multiplex PCR primers together for SNPs Y589 and K552.

*Amplifluor JOE tail: GAAGGTCGGAGTCAACGGATT
#Amplifluor FAM tail: GAAGGTGACCAAGTTCATGCT

Assay name	Allele-specific primer 1	Allele-specific primer 2	Common reverse primer	External multiplex PCR primer	Reference
CATR262	*GCAACTAATTAAAAAAAATTGTGGTCAAGCA	#GCAACTAATTAAAAAAAATTGTGGTCAAGCG	CCCTCATTCACAGGCTAGGAAA	TGTTTTCTTTTTTAAGTGTCTTTGC	This study
CATR456	#TTTGCCCAGGGAAAGACTCAA	*TGCCCAGGGAAAGACTCAGT	GTGAGTGCATTGGTTGAAACTTT	TCCCTTCCAGTTCCTGTTTG	Morin *et al.* 2007
CHRNA1Y111	*GTTTGGCTTGATGGGAAGGC	#GGTTTGGCTTGATGGGAAGGT	GGCACATCTTACGTCAGTAGCT	GTCAGACCAGGAGTCCAATAACG	Morin *et al.* 2007
CHRNAR76	*CAAGCCAAACCCATCCCTCTGTGCTC	#CAAGCCAAACCCATCCCTCTGTGCTT	GTCAGACCAGGAGTCCAATAACG	GGCACATCTTACGTCAGTAGCT	This study
CKK273	#TTAAGAACGCGCCTTCCCG	*CTAAGAACGCGCCTTCCCT	ACAGGTGGTGGCAGGATT	CCACCCCTATGTTCAAGCAC	Morin *et al.* 2007
CSF2R278	#GAGGACAGTGACCTCTGTTTTCT	*AGGACAGTGACCTCTGTTTTCC	AGCACAGCCACATTCCCTT	CTTTGCTCACACAGCAGGTC	Morin *et al.* 2007
CSF2K552	*CATGGCTGGTCAGCTAATAAAGG	#CATGGCTGGTCAGCTAATAAAGT	CTTTGCCCCTGTGGTAGT	CCCCTTGAATGCTAGGTCTG	This study
CSF2Y589	#AGAAGGAGGGTTGCTCAGGAG	*AGAAGGAGGGTTGCTCAGGAA	GACTACCACAGGGGCAAA	GCCAGAAGGAGGGTTGCT	This study
DRD2Y679	*TGGTAATTGTTTATGATGCCACACG	#ATGGTAATTGTTTATGATGCCACACA	TACACCCTTTGCCGGATTCTT	GGGTTAGGTCTCGTTCAGCA	Morin *et al.* 2007
ELN40K209	#GTCCTGACCCCCATCCG	*CGTCCTGACCCCCATCCT	AGCGGCACCTGAGAAGAG	TCCCTTAAACTGTGGCTCGT	Morin *et al.* 2007

EPOR237	*GGGACCACCACTCTTATTACTTTTACT	#GGACCACCACTCTTATTACTTTTACC	AAGATCCAGGAACCTGGAGT	GAAATGCACAAGCCTGGAGT	This study
EPOY292	*TGGAAGCTAGGTAAGGGGC	#GGAAGCTAGGTAAGGGGT	GAAATGCACAAGCCTGGAGT	AAGATCCAGGAACCTGGAGT	Morin *et al.* 2007
F9Y80	#TCGATTTGATTCCTTCTCTATTGTAACATTC	*CGATTTGATTCCTTCTCTATTGTAACATTT	GGGAACCATACTTGCCTTTGGAA	CGAAAAAGAAGACAGGTTAATGG	Morin *et al.* 2007
GRPY190	#TCCTTTCAAGGTTCGACCTGGTCT	*CCTTTCAAGGTTCGACCTGGTT	CCCCCCCCCACTTTCTTTTTT	TGCAGCAGGACATCAAGTTC	Morin *et al.* 2007
IFNGY234	#GCCCCTGAGATAAAGCCTTGT	*TTGGCCCCTGAGATAAAGCCTTA	ACTCACTAGGCAAGTCTATGTGATT	CCTAGTTGGCCCCTGAGATA	Morin *et al.* 2007
INTS368	*GCACAGAGGAAGGGAGGG	#GCACAGAGGAAGGGAGGC	CAAATCTCTGCGGGACAGTT	GAACCTCAGCAAAGGCCC	Morin *et al.* 2007
PKMY237	#CTTTTTGACATGCTCTGTACAA	*CTTTTTGACATGCTCTGTACAG	AGACTTGGCCAGCCCTCTAT	CTTCCTTAGCAGAGCGTCTCA	Morin *et al.* 2007
PmABHD5M274	*ACAGACAGGTCCAATAGCACTGA	#TAGACAGGTCCAATAGCACTGC	ACCTCTAACAATAGGGCCAACA	TCTGTCCTAGAGCCACAGCA	This study
PmABHD5Y447	*ACAGATCAGTATTGCTTTTTCTTTTATGTTTTAC	#ACAGATCAGTATTGCTTTTTCTTTTATGTTTTAT	CACAATGACACACACAAAGACAT	ACTACAGATCAGTATTGCTTTTTCTTTT	This study
PmABHD5R671	#GATCTGTGACACTGTGGACTGAA	*ATCTGTGACACTGTGGACTGAG	GGAACTGTATTAGCCATGTGCAT	AGGAGATCTGTGACACTGTGGA	This study
PmBH92S122	*CTGTCTGTGAGTGTCATTTAGCAC	#GTCTGTGAGTGTCATTTAGCAG	TGACTGTATTTCACTTTACTTGCACT	GGCCTATGGTAGGTATCCTGTC	This study
PmBH92Y172	*GTCAACTGATAGAAGTGGTTTATAGTAC	#TACAGTCAACTGATAGAAGTGGTTTATAGTAT	GCTCAACCCAATAAAAAAAAGCTA		This study
PmCHYR 304	#TAGCAGCCTGGGAGGGATAGTT	*TAGCAGCCTGGGAGGGATAGTC	ACTGTCCCTGTGCTGATCAT	CACCCCATGACCCTGTGTA	This study
PmDDX5R109	*CTGTTCCGACAGTCATCCTTT	#CTGTTCCGACAGTCATCCTTC	ACAGAGGTTCAGGTCGTTCC	CCCCTTTTGCCAACAGAGTA	This study
PmHSPA9Y220	#TCTCCTACATAGCCATTTATGGAACTCA	*TCCTACATAGCCATTTATGGAACTCG	GTAGTCAAGAAGGGAGGAAGAA	CTGTCACTGATGGCTCCTACA	This study
PmLAPTM4R553	#GGTGGTCTGTTGAGTTTCGCA	*GTGGTCTGTTGAGTTTCGCG	CCAAACACAGTTGATTAGATAAGCCTA	GAGCAGGTGGTCTGTTGAGTT	This study
PmMYL4R358	#GAAGGAGAGGAGAGCAGGT	*AGGAGAGGAGAGCAGGC	ACTGAGGCAAAGACAAGGACA	AGGGTGGGAAGGAGAGGAG	This study

PmPHGDHS172	*CTGGTGGGAGGAAGAGAGG	#TCTGGTGGGAGGAAGAGAGC	CAACCTCACCAGCTCCAAA	AGGGAGCAGTGAGACCAGAA	This study
PmPHGDHM200	*CCCCAGAAAGGAGGTGTGT	#TCCCCAGAAAGGAGGTGTGG	TTCCTCCCACCAGCTCTT	AGGGAGCAGTGAGACCAGAA	This study
PmPHGDHR223	*AGTGAGACCAGAAAGACCGT	#GTGAGACCAGAAAGACCGC	TTCCTCCCACCAGCTCTT	AGGGAGCAGTGAGACCAGAA	This study
PmPHGDHY321	#GGAAGCAACTAATATCTCGGGGG	*GGAAGCAACTAATATCTCGGGGA	GGATTTGGACCAGACTCAGTTT	GTACTTCCTGGGACCACTGC	This study
PNDR111	#TTCAGGAGGGCAGATCTATCGA	*AGGAGGGCAGATCTATCGGA	AACCCAGCCCAGAGAGAT	GTAATAGCTGGACCTCCGCA	Morin *et al.* 2007
RDSK456	*CCATCGACATGCTGCAAATTGAG	#ACCATCGACATGCTGCAAATTGAT	TTGTTGCCACAGCACTTGAA	AGAAGACCATCGACATGCTG	Morin *et al.* 2007
RYR2R327	#AATTCCTGTTCGGAATGGAGAACAT	*TTCCTGTTCGGAATGGAGAACAC	GGTGGAAAGGATGAGCAGAAT	CACGTATCTCTAGGGAGCAGC	Morin *et al.* 2007
SPTBN1S279	*AGGTCCATTTCAGAATAGCAAGACAG	#TAGGTCCATTTCAGAATAGCAAGACAC	GAGATGCAGTAGGGTAGCCTT	CCAAGCAGCACTCAAGTACG	Morin *et al.* 2007
SPTBN1Y753	*TTTAACGCCAAGGCGGGCACG	#TTTAACGCCAAGGCGGGCACA	GTAGCCGACTGCCTGCAAA	TAACCTGTTTAACGCCAAGG	This study

Table S5. Summary of population structure analyses for mtDNA, microsatellites, SNPs and combined nuclear markers (nDNA), and sensitivity analyses for linked SNP loci. All analyses were based on the same master list of samples containing adult males, females and young, and "others" (subadult males and individuals of unknown sex). Reading the columns from left to right, there are data sets for mtDNA (column 1), microsatellites (column 2), SNPs (column 3-7) and combined nDNA (microsatellites and SNPs, columns 8-11). Each column heading indicates the total sample size; the sample size for each of the three strata; the identifier for the analysis set (AS); the number of nuclear loci; and for the SNP loci, alternative methods for reconstructing the gametic phase of alleles for linked loci. These include different options for phasing the samples (based on one population or three strata) and alternative ways of treating missing data in the program PHASE. Again reading from left to right are analyses done for 36 bi-allelic loci without phasing linked loci (column 3 and 8); for 24 loci with phasing of linked loci based on "North Pacific" stratification (column 4 and 9), phasing of linked loci based on "three strata" stratification (column 5 and 10), an analysis without phasing the linked loci in which the first locus of the linked set was used (column 6 and 11), and phasing based on the "three strata" stratification in which "keep missing data" mode was used (column 7). The results for various population structure statistics are shown in the rows. Reading from top to bottom Fst, Φst and Fisher's exact test for mtDNA. For the nuclear DNA, the analyses are, from top to bottom, Fst, F'st, Gst, G'st, G"st, D and Chi-square. For each statistic, the overall and pairwise comparisons and their probabilities are shown. Comparisons that are statistically significant at the α=0.05 level are in bold. Comparisons that are statistically significant at the α=0.1 level are in blue. Eastern tropical Pacific = ETP.

	MtDNA (n = 194) AS108		**Msats (n = 168) AS78**		**SNPs (n = 170) AS82**		**SNPs (n = 170) AS82a**		**SNPs (n = 170) AS82b**		**SNPs (n = 170) AS82c**		**SNPs (n = 170) AS82e**	
	CA Current (52) v. ETP (114)		CA Current (43) v. ETP (98)		CA Current (41) v. ETP (102)		CA Current (41) v. ETP (102)		CA Current (41) v. ETP (102)		CA Current (41) v. ETP (102)		CA Current (41) v. ETP (102)	
	CA Current (52) v. Hawai'i (28)		CA Current (43) v. Hawai'i (27)		CA Current (41) v. Hawai'i (27)		CA Current (41) v. Hawai'i (27)		CA Current (41) v. Hawai'i (27)		CA Current (41) v. Hawai'i (27)		CA Current (41) v. Hawai'i (27)	
	ETP (114) v. Hawai'i (28)		ETP (98) v. Hawai'i (27)		ETP (102) v. Hawai'i (27)		ETP (102) v. Hawai'i (27)		ETP (102) v. Hawai'i (27)		ETP (102) v. Hawai'i (27)		ETP (102) v. Hawai'i (27)	
Number of loci			6 loci		36 loci		24 loci		24 loci		24 loci		24 loci	
Treatment of linked SNP loci:							16 bi-allelic and 8 linked loci		16 bi-allelic and 8 linked loci		16 bi-allelic and the first bi-allelic locus of each linked set		16 bi-allelic and 8 linked	
PHASE: stratification							North Pacific		three strata				three strata	
PHASE: "keep mssing data" mode							"normal"		"normal"		"normal"		"keep missing data"	
	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value
overall	0.0390	**0.0030**	0.0020	0.1234	0.0074	**0.0020**	0.0081	**0.0012**	0.0084	**0.0005**	0.0106	**0.0009**	0.0083	**0.0014**
CA Current v. ETP	0.0336	**0.0084**	0.0024	0.1187	0.0094	**0.0020**	0.0123	**0.0002**	0.0128	**0.0003**	0.0138	**0.0004**	0.0129	**0.0002**
CA Current v. Hawai'i	0.0696	**0.0054**	0.0030	0.1942	0.0113	**0.0140**	0.0098	**0.0203**	0.0104	**0.0160**	0.0158	**0.0057**	0.0108	**0.0133**
ETP v. Hawai'i	0.0325	**0.0469**	0.0010	0.3183	0.0025	0.2098	0.0006	0.3941	0.0008	0.3778	0.0033	0.1937	0.0002	0.4408
	Φst	Φst p-value	F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value
overall	0.0380	**0.0017**	0.0114	0.1263	0.0109	**0.0022**	0.0137	**0.0009**	0.0143	**0.0008**	0.0153	**0.0004**	0.0142	**0.0007**
CA Current v. ETP	0.0471	**0.0059**	0.0132	0.1222	0.0140	**0.0020**	0.0210	**0.0002**	0.0218	**0.0003**	0.0201	**0.0005**	0.0221	**0.0002**
CA Current v. Hawai'i	0.0366	**0.0256**	0.0170	0.1849	0.0166	**0.0170**	0.0167	**0.0222**	0.0177	**0.0149**	0.0228	**0.0062**	0.0184	**0.0131**
ETP v. Hawai'i	0.0327	**0.0409**	0.0057	0.3162	0.0037	0.2088	0.0011	0.3924	0.0013	0.3712	0.0047	0.2030	0.0003	0.4389
			Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value
overall			-0.0026	0.1470	0.0013	**0.0038**	0.0012	**0.0053**	0.0014	**0.0032**	0.0035	**0.0017**	0.0014	**0.0054**
CA Current v. ETP			-0.0031	0.1249	0.0004	**0.0010**	0.0018	**0.0001**	0.0020	**0.0002**	0.0025	**0.0004**	0.0020	**0.0003**
CA Current v. Hawai'i			-0.0062	0.1822	-0.0019	**0.0150**	-0.0026	**0.0191**	-0.0023	**0.0152**	0.0004	**0.0051**	-0.0022	**0.0120**
ETP v. Hawai'i			-0.0055	0.3229	-0.0047	0.1748	-0.0056	0.3287	-0.0056	0.3128	-0.0043	0.1673	-0.0059	0.3807
			G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value
overall			-0.0201	0.1535	0.0021	**0.0036**	0.0024	**0.0048**	0.0029	**0.0030**	0.0058	**0.0022**	0.0028	**0.0036**
CA Current v. ETP			-0.0307	0.1222	0.0007	**0.0020**	0.0043	**0.0003**	0.0049	**0.0002**	0.0049	**0.0004**	0.0050	**0.0001**
CA Current v. Hawai'i			-0.0630	0.1914	-0.0037	**0.0140**	-0.0063	**0.0186**	-0.0055	**0.0146**	0.0007	**0.0054**	-0.0052	**0.0118**
ETP v. Hawai'i			-0.0570	0.3559	-0.0090	0.1848	-0.0132	0.3270	-0.0131	0.3085	-0.0080	0.1599	-0.0140	0.3599
			G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value
overall			-0.0214	0.1580	0.0028	0.0042	0.0029	**0.0051**	0.0037	**0.0042**	0.0075	**0.0018**	0.0035	**0.0034**
CA Current v. ETP			-0.0339	0.1270	0.0011	**0.0050**	0.0061	**0.0001**	0.0069	**0.0004**	0.0074	**0.0003**	0.0070	**0.0001**
CA Current v. Hawai'i			-0.0696	0.1988	-0.0056	**0.0140**	-0.0090	**0.0197**	-0.0079	**0.0170**	0.0011	**0.0061**	-0.0075	**0.0135**
ETP v. Hawai'i			-0.0628	0.3493	-0.0138	0.1688	-0.0190	0.3233	-0.0187	0.3131	-0.0123	0.1640	-0.0201	0.3564
			D	D p-value	D	D p-value	D	D p-value	D	D p-value	D	D p-value	D	D p-value
overall			0.0058	0.0599	0.0005	**0.0040**	0.0013	**0.0021**	0.0015	**0.0014**	0.0010	**0.0016**	0.0015	**0.0020**
CA Current v. ETP			0.0054	0.0543	0.0005	**0.0030**	0.0012	**0.0019**	0.0014	**0.0011**	0.0009	**0.0016**	0.0015	**0.0011**
CA Current v. Hawai'i			0.0077	0.0785	0.0005	**0.0100**	0.0012	**0.0083**	0.0015	**0.0035**	0.0011	**0.0039**	0.0016	**0.0033**
ETP v. Hawai'i			0.0008	0.2420	0.0000	0.2228	0.0000	0.3722	0.0000	0.3561	0.0000	0.2092	0.0000	0.4257
	Fisher's exact	Fisher's exact p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value
overall		**<0.001**	211.3848	**0.0376**	112.1561	**0.0040**	112.5578	**0.0143**	117.6014	**0.0081**	83.7362	**0.0016**	117.4487	**0.0086**
CA Current v. ETP		**0.0010**	109.6190	**0.0319**	63.5984	**0.0060**	68.6745	**0.0050**	72.8397	**0.0027**	50.2425	**0.0016**	73.5552	**0.0022**
CA Current v. Hawai'i		**0.0001**	88.5854	0.1179	62.1647	**0.0030**	59.6305	**0.0143**	60.9711	**0.0111**	45.8901	**0.0036**	62.5342	**0.0076**
ETP v. Hawai'i		0.2914	92.4842	0.3202	44.3553	0.2238	40.4852	0.5029	40.6648	0.5017	30.0499	0.2101	39.3436	0.5520

combined nDNA (n = 153) AS84		**combined nDNA (n = 153) AS84a**		**combined nDNA (n = 153) AS84b**		**combined nDNA (n = 153) AS84c**	
CA Current (40) v. ETP (87)		CA Current (40) v. ETP (87)		CA Current (40) v. ETP (87)		CA Current (40) v. ETP (87)	
CA Current (40) v. Hawai'i (26)		CA Current (40) v. Hawai'i (26)		CA Current (40) v. Hawai'i (26)		CA Current (40) v. Hawai'i (26)	
ETP (87) v. Hawai'i (26)		ETP (87) v. Hawai'i (26)		ETP (87) v. Hawai'i (26)		ETP (87) v. Hawai'i (26)	
36 loci		24 loci		24 loci		24 loci	
		16 bi-allelic and 8 linked loci		16 bi-allelic and 8 linked loci		16 bi-allelic and the first bi-allelic locus of each linked set	
		North Pacific		three strata			
		"normal"		"normal"		"normal"	
Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value	Fst	Fst p-value
0.0062	**0.0018**	0.0064	**0.0007**	0.0065	**0.0008**	0.0069	**0.0015**
0.0070	**0.0026**	0.0088	**0.0006**	0.0089	**0.0004**	0.0085	**0.0009**
0.0104	**0.0060**	0.0089	**0.0080**	0.0093	**0.0065**	0.0114	**0.0036**
0.0029	0.1588	0.0013	0.3095	0.0014	0.2893	0.0022	0.2215
F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value	F'st	F'st p-value
0.0102	**0.0019**	0.0125	**0.0010**	0.0128	**0.0005**	0.0117	**0.0005**
0.0116	**0.0040**	0.0173	**0.0005**	0.0176	**0.0009**	0.0145	**0.0010**
0.0170	**0.0046**	0.0175	**0.0074**	0.0183	**0.0064**	0.0193	**0.0035**
0.0047	0.1653	0.0025	0.3028	0.0027	0.2929	0.0037	0.2236
Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value	Gst	Gst p-value
0.0004	**0.0022**	0.0001	**0.0026**	0.0002	**0.0018**	0.0008	**0.0027**
-0.0011	**0.0015**	-0.0003	**0.0003**	-0.0002	**0.0004**	-0.0004	**0.0007**
-0.0026	**0.0044**	-0.0034	**0.0076**	-0.0032	**0.0063**	-0.0022	**0.0054**
-0.0049	0.0914	-0.0057	0.1892	-0.0056	0.1838	-0.0053	0.1440
G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value	G'st	G'st p-value
0.0008	**0.0021**	0.0002	**0.0025**	0.0005	**0.0026**	0.0016	**0.0025**
-0.0026	**0.0019**	-0.0008	**0.0005**	-0.0005	**0.0002**	-0.0009	**0.0011**
-0.0060	**0.0039**	-0.0100	**0.0082**	-0.0094	**0.0070**	-0.0052	**0.0045**
-0.0109	0.0861	-0.0164	0.1854	-0.0162	0.1728	-0.0124	0.1421
G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value	G"st	G"st p-value
0.0009	**0.0028**	0.0002	**0.0029**	0.0006	**0.0015**	0.0019	**0.0020**
-0.0037	**0.0020**	-0.0010	**0.0005**	-0.0007	**0.0002**	-0.0013	**0.0010**
-0.0086	**0.0030**	-0.0135	**0.0077**	-0.0126	**0.0048**	-0.0075	**0.0046**
-0.0158	0.0947	-0.0222	0.1811	-0.0220	0.1756	-0.0178	0.1403
D	D p-value	D	D p-value	D	D p-value	D	D p-value
0.0011	**0.0008**	0.0023	**0.0006**	0.0024	**0.0005**	0.0016	**0.0009**
0.0007	**0.0032**	0.0017	**0.0014**	0.0019	**0.0014**	0.0012	**0.0023**
0.0014	**0.0012**	0.0030	**0.0004**	0.0033	**0.0001**	0.0024	**0.0013**
0.0001	0.1818	0.0000	0.2502	0.0000	0.2463	0.0000	0.2390
Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value	Chi2	Chi2 p-value
314.1924	**0.0022**	317.1805	**0.0037**	321.3798	**0.0030**	281.0002	**0.0028**
172.6963	**0.0011**	181.1305	**0.0007**	184.2279	**0.0003**	158.0412	**0.0011**
152.5972	**0.0021**	149.9042	**0.0040**	151.2437	**0.0043**	132.9431	**0.0048**
128.6000	0.2961	123.4081	0.4858	123.6972	0.4746	111.0080	0.4047

Table S6. Variable sites among all known mtDNA sperm whale haplotypes globally and GenBank accession numbers. Haplotypes in bold were found in this study.

	Site Number			
[	11112222	2222222223	3333]	
[	5602580001	3467788880	0125]	
[	8251040781	5302367895	8940]	
#a	**TCCCCTTAAC**	**AGAACAAATC**	**AGCC**	**DQ512921**
#b	**.T.....**	**.....**	**....**	**DQ512922**
#c	**.T.....**	**.....G..**	**....**	**DQ512923**
#d	**.....C..T**	**.....**	**....**	**DQ512924**
#e	**C.....**	**.....**	**....**	**DQ512925**
#f	**C...T.....**	**....T.....**	**....**	**DQ512926**
#g	**C.....**	**.....**	**...T**	**DQ512927**
#h	**.....**	**....T.G...**	**....**	**DQ512928**
#i	**.....**	**.....**	**..T.**	**DQ512929**
#j	**.....**	**.....G..**	**....**	**DQ512930**
#k	**.T.....**	**....T..G..**	**..T.**	**DQ512931**
#l	**.T.....**	**.A.....G..**	**....**	**DQ512932**
#m	**.T.....**	**.....G....**	**....**	**DQ512933**
#n	**.T.....**	**.....**	**.A..**	**DQ512934**
#o	**.T...C....**	**..G.....**	**.AT.**	**DQ512935**
#p	**.T.....T**	**.....**	**....**	**DQ512936**
#q	.T...C....	..GG.....	.AT.	DQ512937
#r	.T.....	..G.....	.AT.	DQ512938
#s	.TT..C....	..GG.....	.AT.	DQ512939
#t	.....	...G.....	....	DQ512940
#u	.....G.	.....	....	DQ512941
#v	.....	.....C.	....	DQ512942
#w	.....T	.....	....	DQ512943
#x	.T.....G..	.....G..	....	DQ512944
#y	.T.....G..	...G...G..	....	DQ512945
#z	.T.....	.....G..	G...	DQ512946
#aa	**C...T.....**	**G.....T**	**....**	**DQ512947**
#bb	...T.....	.....	....	DQ512948

Table S7. Allele frequencies for each microsatellite locus, by strata. AS78

Locus: D17

Pop	Alleles																						Genes	Alleles
	143	150	154	160	161	163	165	167	169	171	173	175	177	179	181	182	184	186	188	190	192			
CA Current	0.036	0.000	0.000	0.012	0.190	0.167	0.095	0.190	0.048	0.060	0.036	0.012	0.024	0.024	**0.024**	0.024	0.012	0.036	0.012	0.000	0.000		84	17
E tr Pac	0.051	**0.015**	0.010	0.005	0.092	0.148	0.112	0.128	0.041	0.051	0.015	0.056	0.051	0.071	0.000	0.010	0.036	0.041	0.056	**0.005**	**0.005**		196	20
Hawaii	0.056	0.000	0.019	0.000	0.037	0.204	0.148	0.111	0.019	0.130	0.037	0.074	0.000	0.074	0.000	0.019	0.000	0.074	0.000	0.000	0.000		54	13

Locus: EV1

Pop	Alleles													Genes	Alleles
	123	125	127	129	131	133	135	137	140	142	144	146	148		
CA Current	0.000	0.571	0.048	0.000	0.000	0.000	0.071	0.048	0.083	0.143	0.036	0.000	0.000	84	7
E tr Pac	**0.005**	0.526	0.051	**0.015**	**0.010**	0.020	0.092	0.010	0.051	0.209	0.005	**0.005**	0.000	196	12
Hawaii	0.000	0.593	0.056	0.000	0.000	0.093	0.037	0.000	0.056	0.148	0.000	0.000	**0.019**	54	7

Locus: EV5

Pop	Alleles									Genes	Alleles
	153	159	161	163	166	170	172	174	176		
CA Current	0.012	0.395	0.151	0.314	0.023	0.000	0.047	0.023	0.035	86	8
E tr Pac	0.010	0.371	0.088	0.330	0.062	0.021	0.088	0.021	0.010	194	9
Hawaii	0.019	0.333	0.148	0.278	0.037	0.019	0.148	0.019	0.000	54	8

Locus: SW10

Pop	Alleles													Genes	Alleles
	143	148	150	152	154	156	158	160	162	164	166	168	170		
CA Current	0.012	0.070	0.058	0.209	0.105	0.267	0.140	0.070	0.035	0.000	0.023	**0.012**	0.000	86	11
E tr Pac	0.010	0.010	0.087	0.138	0.128	0.240	0.168	0.097	0.041	0.046	0.026	0.005	**0.005**	196	13
Hawaii	0.019	0.074	0.111	0.130	0.111	0.167	0.148	0.130	0.056	0.019	0.037	0.000	0.000	54	11

Locus: SW13

Pop	Alleles													Genes	Alleles
	152	154	160	163	165	167	169	171	173	175	177	179			
CA Current	0.000	0.013	0.000	0.066	0.053	0.237	0.158	0.158	0.158	0.132	0.013	0.013		76	10
E tr Pac	**0.005**	0.005	**0.010**	0.092	0.071	0.362	0.179	0.066	0.122	0.056	0.010	0.020		196	12
Hawaii	0.000	0.019	0.000	0.096	0.135	0.231	0.212	0.096	0.058	0.077	0.058	0.019		52	10

Locus: SW19

Pop	Alleles																										Genes	Alleles
	93	100	108	110	117	119	121	123	125	127	130	132	134	136	138	140	142	145	147	149	153	157	166	167	169	171		
CA Current	0.012	0.024	0.024	0.012	0.024	0.061	0.000	0.000	0.073	0.085	0.037	0.061	0.134	0.110	0.195	0.073	0.024	0.000	0.000	0.024	**0.012**	0.000	**0.012**	0.000	0.000	0.000	82	18
E tr Pac	0.021	0.090	0.005	0.005	0.005	0.016	0.000	**0.016**	0.112	0.064	0.069	0.080	0.106	0.090	0.133	0.101	0.032	0.021	0.005	0.011	0.000	**0.005**	0.000	**0.005**	**0.005**	0.000	188	22
Hawaii	0.037	0.037	0.019	0.000	0.037	0.037	**0.019**	0.000	0.093	0.056	0.056	0.148	0.093	0.185	0.037	0.093	0.000	0.019	0.019	0.000	0.000	0.000	0.000	0.000	0.000	**0.019**	54	17

Table S8. Allele frequencies for each SNP locus, by strata. Haplotype inference based on “three-strata” phase data set. AS82b

Locus: CATR262_CATR4561

Pop	Alleles				Genes
	1	2	3	4	
CA Current	0.171	0.000	0.049	0.780	82
E t Pac	0.167	0.020	0.049	0.765	204
Hawaii	0.250	0.019	0.019	0.712	52

Locus: CHRNAR76_CHRNA1Y1111

Pop	Alleles			Genes
	1	2	3	
CA Current	0.110	0.683	0.207	82
E t Pac	0.044	0.794	0.162	204
Hawaii	0.037	0.667	0.296	54

Locus: CSF2R278_CSF2K552_CSF2Y5891

Pop	Alleles				Genes
	1	2	3	4	
CA Current	0.110	0.549	0.317	0.024	82
E t Pac	0.183	0.401	0.366	0.050	202
Hawaii	0.259	0.407	0.315	0.019	54

Locus: EPOR237_EPOY2921

Pop	Alleles			Genes
	1	2	3	
CA Current	0.268	0.610	0.122	82
E t Pac	0.191	0.730	0.078	204
Hawaii	0.204	0.741	0.056	54

Locus: PmABHD5M274_PmABHD5Y447_PmABHD5R6711

Pop	Alleles				Genes
	1	2	3	4	
CA Current	0.024	0.354	0.390	0.232	82
E t Pac	0.045	0.205	0.435	0.315	200
Hawaii	0.019	0.259	0.463	0.259	54

Locus: PmBH92S122_PmBH92Y1721

Pop	Alleles			Genes
	1	2	3	
CA Current	0.268	0.427	0.305	82
E t Pac	0.257	0.396	0.347	202
Hawaii	0.148	0.333	0.519	54

Locus: PmPHGDHS172_PmPHGDHM200_PmPHGDHR223_PmPHGDHY3211

Pop	Alleles									Genes
	1	2	3	4	5	6	7	8	9	
CA Current	0.000	0.280	0.000	0.134	0.012	0.183	0.268	0.110	0.012	82
E t Pac	0.005	0.270	0.005	0.137	0.005	0.186	0.309	0.083	0.000	204
Hawaii	0.000	0.167	0.000	0.111	0.000	0.241	0.407	0.074	0.000	54

Locus: SPTBN1S279_SPTBN1Y7531

Pop	Alleles			Genes
	1	2	3	
CA Current	0.146	0.098	0.756	82
E t Pac	0.127	0.069	0.804	204
Hawaii	0.056	0.037	0.907	54

Locus: CKK273_A

Pop	Alleles		Genes
	1	3	
CA Current	0.650	0.350	80
E t Pac	0.500	0.500	180
Hawaii	0.540	0.460	50

Locus: DRD2Y679_A

Pop	Alleles		Genes
	3	4	
CA Current	0.524	0.476	82
E t Pac	0.515	0.485	204
Hawaii	0.481	0.519	54

Locus: ELN40K209_A

Pop	Alleles		Genes
	1	3	
CA Current	0.280	0.720	82
E t Pac	0.456	0.544	204
Hawaii	0.460	0.540	50

Locus: F9Y80_A

Pop	Alleles		Genes
	3	4	
CA Current	0.613	0.388	80
E t Pac	0.531	0.469	192
Hawaii	0.620	0.380	50

Locus: GRPY190_A

Pop	Alleles		Genes
	3	4	
CA Current	0.951	0.049	82
E t Pac	0.965	0.035	198
Hawaii	1.000	0.000	54

Locus: IFNGY234_A

Pop	Alleles	Genes

```
            ---------- -----
            3     4
CA Current 0.103 0.897 78
E t Pac    0.085 0.915 200
Hawaii     0.077 0.923 52

 Locus:  INTS368_A
------------------
   Pop     Alleles     Genes
            ---------- -----
            1     4
CA Current 0.613 0.388 80
E t Pac    0.378 0.622 188
Hawaii     0.463 0.537 54

 Locus:  PKMY237_A
------------------
   Pop     Alleles     Genes
            ---------- -----
            3     4
CA Current 0.829 0.171 76
E t Pac    0.797 0.203 202
Hawaii     0.907 0.093 54

 Locus:  PmCHYR304_A
-------------------
   Pop     Alleles     Genes
            ---------- -----
            1     2
CA Current 0.963 0.037 80
E t Pac    0.969 0.031 194
Hawaii     0.963 0.037 54

 Locus:  PmDDX5R109_A
--------------------
   Pop     Alleles     Genes
            ---------- -----
            1     2
CA Current 0.684 0.316 76
E t Pac    0.629 0.371 186
Hawaii     0.625 0.375 48

 Locus:  PmHSPA9Y220_A
------------------
   Pop     Alleles     Genes
            ---------- -----
            3     4
CA Current 0.134 0.866 82
E t Pac    0.065 0.935 200
Hawaii     0.056 0.944 54

 Locus:  PmLAPTM4R553_A
-------------------
   Pop     Alleles     Genes
            ---------- -----
            1     2
CA Current 0.087 0.912 80
E t Pac    0.144 0.856 194
Hawaii     0.167 0.833 54
```

Locus: PmMYL4R358_A

Pop	Alleles		Genes
	1	2	
CA Current	0.622	0.378	82
E t Pac	0.668	0.332	202
Hawaii	0.630	0.370	54

Locus: PNDR111_A

Pop	Alleles		Genes
	1	2	
CA Current	0.500	0.500	76
E t Pac	0.554	0.446	186
Hawaii	0.462	0.538	52

Locus: RDSk456_A

Pop	Alleles		Genes
	1	3	
CA Current	0.787	0.212	80
E t Pac	0.845	0.155	200
Hawaii	0.944	0.056	54

Locus: RYR2R327_A

Pop	Alleles		Genes
	1	2	
CA Current	0.461	0.539	76
E t Pac	0.301	0.699	186
Hawaii	0.346	0.654	52

Table S9. Pairwise divergence between strata comprised of samples from females and young. Comparisons that are statistically significant at the α=0.05 level are in bold. For mtDNA sequence data (a) divergence was estimated with F_{ST} (with *p*-values in parenthesis) below the diagonal and for Fisher's exact test *p*-values above the diagonal. N = 137 (AS 115). For the nuclear data, divergence was estimated with F'_{ST} (above the diagonal) and F_{ST} (below the diagonal) with *p*-values (in parenthesis below the diagonal). For microsatellite data (b) N = 120 (AS116). For SNP data (c) N = 127 (AS119b). For the combined nDNA (d) N =113 (AS122b).

(a) MtDNA

	California Current (n = 31)	Hawai'i (n = 22)	Eastern tropical Pacific (n = 84)
California Current	----	**0.020 ± 0.003**	**0.001 ± 0.001**
Hawai'i	**0.047 (*p* = 0.050 ± 0.002)**	----	**0.525 ± 0.010**
Eastern tropical Pacific	**0.043 (*p* = 0.016 ± 0.001)**	0.021 (*p* = 0.139 ± 0.003)	----

(b) Microsatellites

	California Current (n = 28)	Hawai'i (n = 21)	Eastern tropical Pacific (n = 71)
California Current	----	-0.013	-0.008
Hawai'i	-0.013 (*p* = 0.663)	----	-0.022
Eastern tropical Pacific	-0.008 (*p* = 0.657)	-0.022 (*p* = 0.874)	----

(c) SNPs

	California Current (n = 28)	Hawai'i (n = 21)	Eastern tropical Pacific (n = 78)
California Current	----	**0.021**	**0.015**
Hawai'i	**0.021 (*p* = 0.019)**	----	0.002
Eastern tropical Pacific	**0.015 (*p* = 0.0138)**	0.002 (*p* = 0.365)	----

(d) Combined nDNA

	California Current (n = 27)	Hawai'i (n = 20)	Eastern tropical Pacific (n = 66)
California Current	----	**0.018**	**0.011**
Hawai'i	**0.018 (*p* = 0.030)**	----	-0.001
Eastern tropical Pacific	**0.011 (*p* = 0.023)**	-0.001 (*p* = 0.524)	----

Table S10. Pairwise divergence between Gulf of Alaska males and the three low latitude strata containing females. Comparisons that are statistically significant at the α=0.05 level are in bold. For mtDNA sequence data, divergence was estimated with F_{ST} with *p*-values in parenthesis. For the SNP data, divergence was estimated with F'_{ST} with *p*-values (in parenthesis below the diagonal).

	Gulf of Alaska mtDNA (n = 32) SNPs (n = 31)
California Current mtDNA (n = 52) SNPs (n = 41)	**Fst = 0.032 (*p* = 0.05)** F'st = 0.011 (*p* = 0.07)
Hawaiʻi mtDNA (n = 28) SNPs (n = 27)	Fst = 0.011 (*p* = 0.25) **F'st = 0.015 (*p* = 0.05)**
Eastern tropical Pacific mtDNA (n = 114) SNPs (n = 102)	Fst = 0.026 (*p* =0.06) **F'st = 0.010 (*p* = 0.04)**