

Review of Japanese albacore catch data for the North Pacific albacore stock assessment in April 2014¹

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¹This working paper was submitted to the ISC Albacore Working Group Intercessional Workshop, 14-18 April 2014, held at the Southwest Fisheries Science Center, La Jolla, California, USA. Document not to be cited without the author's permission.

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Summary

This document report Japanese albacore catch data and procedure for creating the catch data to apply to the North Pacific albacore stock assessment in April 2014. Procedure for creating the data was almost the same as the method applied for previous stock assessment (Matsumoto and Uosaki 2011) but it was slightly modified depending on changes of fishery definition which was agreed in the ISC albacore data preparation meeting in Nov. 2013.

1. Introduction

The data preparatory meeting in Nov. 2013 reached agreement for fishery definition applied to the North Pacific albacore stock assessment in April 2014, which were different with the fishery definitions applied to the previous stock assessment in 2011 (Anon. 2013). The aims of the document were to (1) report Japanese albacore catch data in accordance with the new fishery definitions; (2) summarize the procedures for creating the catch data.

2. Materials and method

Principal fishery statistics for the catch data were logbook and SID report. The logbook mandatory submitted by fishermen has been compiled at National Research Institute of Far Seas Fisheries (NRIFSF). Logbook database for longline, pole-and-line, driftnet (gillnet) and purse seine were used. The SID report is the annual report of catch statistic on fishery and aquaculture published by the Statistics and Information. This report provides comprehensive statistics for Japanese fisheries including annual catch by species and kind of fishery. Other information about fishery statistics were also used to breakdown annual catch to quarterly catch for Japanese miscellaneous catch. The detail of data source and procedures for creating the catch data was described in Matsumoto and Uosaki (2011).

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3. Results

Geographical location, unit and period of the catch data for each fishery definition were summarized in Table 3 in the report of the data preparatory meeting in Nov. 2013. We extracted the information about Japanese fishery from the Table 3 and add some information about data source and references described the procedures creating the catch data. In addition, the location for north and south area of JPN LL EPO was assigned as ≥ 25 and $< 55^{\circ}\text{N}$ for the northern area, and ≥ 10 and $< 25^{\circ}\text{N}$ for the southern area according to discussion in the data preparatory meeting. Japanese albacore catch data in accordance with the new fishery definitions were shown in **Table 2**.

There were four catch series for Japanese longline fisheries due to two kinds of the catch units (number, weight) and two kinds of fish size (small, large). In specific area ($25\text{-}35^{\circ}\text{N}$ & $130\text{-}140^{\circ}\text{E}$) Japanese longline fishery is more likely to catch small sized fish, and outside the specific area the fishery have a good chance to catch large sized fish. The data source for number based catch data were logbook database of offshore and distant longline (vessel size is large). The number based data series were breakdowned according to inside and outside of the specific area. The data source for weight based catch series were logbook database of coastal longline (vessel size is small) and the SID report. The weight based catch series were created by the procedure of previous reports (Matsumoto and Uosaki 2011, Matsumoto et al. 2013) with slight modification for the setting of the specific area (**Fig. 1**).

After the data preparatory meeting the working group has continued to discuss the fishery definition of the stock assessment via e-mail. During these discussions it is suggested that JPN LL-large is appropriate for splitting southern and northern area because of larger fish (ca >120 cm) had been caught in the southern area before around 1992 (detail in Kiyofuji et al 2014). Therefore catch time series before 1992 for JPN LL-large split by 20°N were also provided (**Table 3**). The annual proportion of the southern area to total geographical area (southern + northern) for weight based (F6_JP_LLL_wt) is constant (9.1%) thorough time period because the proportion of weight based catch before 1993 was average proportion for 1994 to 1997. The average proportion for number based catch (F7_JP_LLL_num) from 1966 to 1993 was low (8.3 %) except for high proportion more than 10% from 1970 to 1976 (**Fig 3**)

4. References

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Anon. (ISC). 2013. Data preparatory meeting of albacore tuna in the North Pacific Ocean. Report of the albacore working group workshop. International Scientific Committee for Tuna and Tuna-like Species in the North Pacific Ocean. 5-12 November 2013 Shizuoka, Japan. 36pp.

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Matsumoto, T. and Uosaki, K. 2011. Review of developing Japanese albacore fishery data to apply to stock synthesis model. ISC/11/ALBWG/08. 43pp.

Matsumoto, T., Kiyofuji, H. and Okamoto H. 2013 Suggestion of alternative estimation of albacore catch by Japanese coastal longline fishery to apply to stock synthesis model. ISC/13/ALBWG/01/12. 26pp.

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Table 1 Fishery definition and references for developing Japanese albacore fishery data to apply stock assessment in April 2014.

from report of data preparatory meeting in Nov. 2013 (Table 3)				references	SS control file (Stock assessment meeting in Apr. 2014)
FisheryName	location	unit	period		FisheryName
JPN PL	10-55°N & 120°E-120°W	weight (ton)	1952 -1965 annual 1966 -2012 quarterly	·Matsumoto and Uosaki (2011) (ISC/11/ALBWG/08)	F1_JPPL_Q12_GN_Jpmisc F2_JPPL_Q34
JPN LL-small (JPN LL-S)	25-35°N & 130-140°E	weight (ton)	1966-2012 quarterly		F3_JPLLSw_Q12 F4_JPLLSw_Q34
		number	1952-2012 quarterly		F5_JPLLSn_Q12 F6_JPLLSn_Q34
JPN LL-large (JPN LL-L)	10-55°N & 130°E-180° (excluding JPN LL-S area)	weight (ton)	1966-2012 quarterly	·Matsumoto and Uosaki (2011) (ISC/11/ALBWG/08) ·Matsumoto et al. (2013) (ISC/13/ALBWG/01/12) ·this document	F8_JPLLLNw_Q14_KR F9_JPLLLNw_Q23 F12_JPLLLNw_Q14_KR_7593 F13_JPLLLNw_Q23_7593 F16_JPLLSw_Q14 F17_JPLLSw_Q23
		number	1952-2012 quarterly		F10_JPLLLNn_Q14 F11_JPLLLNn_Q23 F14_JPLLLNn_Q14_7593 F15_JPLLLNn_Q23_7593 F18_JPLLSn_Q14 F19_JPLLSn_Q23
JPN LL EPO (JPN LL-EPO)	10-25°N & 120°W-180° *	number	1952-2012 quarterly	·Matsumoto and Uosaki (2011) (ISC/11/ALBWG/08)	F23_TWLLb_EPOS
	25-55°N & 120°W-180° *				F24_JPLL_EPON
JPN GN	25-55°N & 120°E-160°E	weight (ton)	1966-2012 quarterly	·Matsumoto and Uosaki (2011) (ISC/11/ALBWG/08)	F1_JPPL_Q12_GN_Jpmisc
JPN MISC	Coastal Japan EEZ waters	weight (ton)	1966-2012 quarterly	·Matsumoto and Uosaki (2011) (ISC/11/ALBWG/08)	F1_JPPL_Q12_GN_Jpmisc

* The definition was not described in the report of the data preparatory meeting, thus the area definition was assigned according to the discussion in the data preparatory meeting.

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Table2 Japanese albacore fishery data to apply stock assessment in April 2014 submitted to ISC ALB working group in Dec. 2013. Fleet names for data preparatory meeting and for stock assessment meeting were presented.

Fleet name in data preparatory meeting (Nov. 2013)												
Year	Season	JPN_PL_Q12	JPN_PL_Q34	JPN_LL_sm_all_catchwt	JPN_LL_sm_all_catchnum	JPN_LL_large_c_atcwt	JPN_LL_large_c_atcnum	JPN_EPO_LL_north	JPN_EPO_LL_south	JPN_GillNet	JPN_Misc	
Fleet name in stock assessment meeting (Apr. 2014)												
SS control file	F1_JPPL_Q12_GN_Jpmisc	F2_JPPL_Q34	F3_JPLLSw_Q12	F4_JPLLSw_Q34	F5_JPLLSn_Q12	F6_JPLLSn_Q34	*1	*2	F24_JPLL_EP_ON	F23_TWLLb_EPOS	F1_JPPL_Q12_GN_Jpmisc	F1_JPPL_Q12_GN_Jpmisc
1952	1				267.53			984.66	5.26			2.25
1952	2				5.19			53.93	0.06			0.96
1952	3				0.00			1.12	0.60			0.82
1952	4				1.15			357.20	0.40			4.33
1953	1				362.56			962.27	51.30			2.03
1953	2				4.53			21.67	0.00			0.05
1953	3				0.00			1.47	0.00			0.04
1953	4				3.17			315.14	9.44			0.06
1954	1				154.81			853.01	10.53			0.10
1954	2				13.27			65.34	0.00			0.09
1954	3				0.00			1.76	1.45			0.00
1954	4				1.89			221.06	11.33			0.00
1955	1				155.54			617.38	11.17			0.36
1955	2				3.32			56.71	0.03			0.02
1955	3				0.00			4.48	3.52			0.01
1955	4				0.99			176.10	16.57			0.15
1956	1				146.04			514.48	4.23			0.17
1956	2				8.49			92.98	0.01			0.00
1956	3				0.00			2.77	1.40			0.00
1956	4				4.30			142.96	4.58			0.02
1957	1				403.70			622.38	15.84			0.08
1957	2				7.82			28.34	0.01			0.01
1957	3				0.00			20.46	0.49			0.00
1957	4				11.85			149.86	22.38			0.06
1958	1				207.61			600.37	13.37			1.09
1958	2				26.95			21.12	0.05			0.65
1958	3				0.00			6.82	2.19			0.01
1958	4				12.91			239.53	17.59			0.52
1959	1				251.29			494.37	7.92			2.61
1959	2				5.90			7.96	0.89			0.17
1959	3				0.00			11.40	1.33			0.00
1959	4				20.17			181.12	8.83			0.04
1960	1				126.10			566.80	8.21			0.06
1960	2				43.70			16.99	0.77			0.28
1960	3				0.00			15.78	1.29			0.01
1960	4				25.79			248.30	21.23			0.20
1961	1				197.95			499.51	22.80			1.33
1961	2				27.92			27.87	0.14			0.53
1961	3				0.00			8.76	2.05			0.01
1961	4				2.98			166.36	104.43			0.47
1962	1				204.70			511.97	22.39			2.52
1962	2				24.48			3.79	0.27			0.72
1962	3				0.00			7.41	0.52			0.26
1962	4				3.03			97.98	30.22			2.26
1963	1				184.77			187.28	7.96			4.82
1963	2				49.81			18.23	0.14			4.48
1963	3				0.13			8.41	3.21			0.90
1963	4				10.39			262.23	74.13			0.28
1964	1				359.97			410.80	3.41			2.18
1964	2				31.89			10.12	0.05			2.87
1964	3				0.00			8.32	0.63			0.38
1964	4				2.02			79.91	8.03			2.18
1965	1				126.98			315.37	3.08			1.18
1965	2				24.64			7.67	0.85			1.48
1965	3				0.00			9.22	1.09			0.03
1965	4				3.84			246.58	31.60			0.89
1966	1	232.29		92.98	445.36	61.18		552.93	3.60	0.76	0.00	332.21
1966	2	19969.23		29.76	37.27	8.65		53.14	0.01	0.81	0.00	301.54
1966	3		2401.00	4.36	0.03	14.20		18.03	0.95	0.16	0.00	40.65
1966	4		227.48	30.76	9.11	65.11		323.22	22.10	0.98	0.00	21.60

*1; F8_JPLLLNw_Q14_KR, F9_JPLLLNw_Q23, F12_JPLLLNw_Q14_KR_7593, F13_JPLLLNw_Q23_7593, F16_JPLLLSw_Q14, F17_JPLLLSw_Q23

*2; F10_JPLLLNn_Q14, F11_JPLLLNn_Q23, F14_JPLLLNn_Q14_7593, F15_JPLLLNn_Q23_7593, F18_JPLLLSn_Q14, F19_JPLLLSn_Q23

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Table2 (continue)

Fleet name in data preparatory meeting (Nov. 2013)											
Year	Season	JPN_PL_ Q12	JPN_PL_ Q34	JPN_LL_sm all_catchwt	JPN_LL_sm all_catchnum	JPN_LL_large_c atchwt	JPN_LL_large_c atchnum	JPN_EPO_LL _north	JPN_EPO_LL _south	JPN_GillNet	JPN_Misc
Fleet name in stock assessment meeting (Apr. 2014)											
SS control file	F1_JPPL_ Q12_GN_J pmisc	F2_JPPL_ Q34	F3_JPLLSw _Q12 F4_JPLLSw _Q34	F5_JPLLSn_ Q12 F6_JPLLSn_ Q34	*1	*2	F24_JPLL_EP ON	F23_TWLLb EPOS	F1_JPPL_Q1 2_GN_Jpmis c	F1_JPPL_ Q12_GN_J pmisc	
1967	1	1179.77		114.48	195.75	75.32	1023.57	8.13	2.84	0.00	295.10
1967	2	26269.45		36.64	16.53	10.65	65.49	0.59	2.66	0.00	264.14
1967	3		2867.31	5.37	0.02	17.49	14.84	3.76	0.20	0.00	33.20
1967	4		164.46	37.88	2.24	80.17	364.71	34.29	0.94	0.00	16.56
1968	1	1247.76		252.28	195.09	165.99	826.89	28.33	2.18	0.00	628.89
1968	2	15098.82		80.75	13.06	23.46	37.95	0.83	3.55	0.00	640.28
1968	3		85.41	11.84	0.00	38.54	16.55	0.77	0.61	0.00	77.92
1968	4		165.01	83.47	0.91	176.67	197.48	32.07	0.60	0.00	28.91
1969	1	721.72		281.96	178.03	185.52	444.06	13.43	2.06	0.00	543.63
1969	2	25655.67		90.25	10.82	26.22	23.44	0.03	1.10	0.00	807.83
1969	3		5144.22	13.24	0.11	43.08	12.58	1.00	0.25	0.00	106.61
1969	4		390.39	93.29	0.65	197.45	220.17	102.86	3.63	0.00	21.93
1970	1	164.17		512.13	156.93	336.97	339.00	23.24	5.74	0.00	293.08
1970	2	22489.65		163.92	4.53	47.62	14.85	0.66	4.61	0.00	466.30
1970	3		1224.95	24.04	0.01	78.24	14.66	1.80	1.23	0.00	62.66
1970	4		384.24	169.44	1.03	358.64	107.70	100.10	3.11	0.00	11.95
1971	1	851.54		512.13	52.80	336.97	233.04	32.40	4.44	0.00	203.37
1971	2	49216.51		163.92	2.65	47.62	6.55	0.02	1.11	0.00	1034.05
1971	3		1774.97	24.04	0.01	78.24	6.13	0.31	1.13	0.00	16.84
1971	4		1113.98	169.44	3.11	358.64	112.23	68.30	0.85	0.00	6.74
1972	1	618.49		838.30	93.22	551.58	155.44	76.96	2.98	0.01	364.78
1972	2	52939.33		268.31	2.89	77.95	5.90	0.00	2.85	0.00	524.50
1972	3		6404.79	39.35	0.00	128.07	5.88	0.93	0.57	0.27	20.19
1972	4		606.39	277.36	0.71	587.06	87.94	112.55	2.24	0.73	11.53
1973	1	2867.17		1367.99	134.75	900.11	100.88	42.94	3.63	0.17	300.77
1973	2	59269.59		437.85	6.95	127.21	5.60	0.17	2.68	0.04	973.60
1973	3		6275.61	64.22	0.13	209.00	6.75	7.29	1.88	10.43	591.72
1973	4		354.63	452.62	6.16	958.01	142.73	187.19	14.55	28.36	16.91
1974	1	80.81		943.39	80.39	620.73	154.98	37.46	7.57	0.99	512.12
1974	2	69019.74		301.95	2.26	87.72	15.34	0.02	3.68	0.24	506.97
1974	3		4273.31	44.28	0.02	144.13	21.43	0.11	7.34	59.88	28.85
1974	4		190.15	312.13	2.86	660.66	98.47	63.77	14.57	162.89	17.05
1975	1	442.10		938.85	28.03	617.74	92.68	14.42	8.33	0.73	137.80
1975	2	49313.99		300.50	0.40	87.30	3.25	0.00	1.32	0.18	231.78
1975	3		1846.32	44.07	0.00	143.44	16.24	0.69	2.11	44.38	26.03
1975	4		549.58	310.63	0.37	657.48	149.74	37.41	7.92	120.71	6.39
1976	1	1300.44		1145.09	28.75	753.45	192.51	73.72	6.09	4.72	161.61
1976	2	73920.45		366.51	2.04	106.48	6.23	0.18	1.20	1.14	1207.82
1976	3		1134.33	53.75	0.00	174.95	12.09	1.01	1.29	286.04	17.13
1976	4		8981.87	378.87	0.57	801.91	197.50	142.34	4.91	778.10	7.45
1977	1	469.70		1263.81	50.95	831.56	243.99	63.31	3.82	3.03	161.61
1977	2	24860.03		404.51	0.30	117.52	4.09	0.77	1.80	0.73	772.81
1977	3		765.55	59.33	0.01	193.08	4.20	2.49	1.65	183.92	49.67
1977	4		5838.72	418.15	1.30	885.05	150.78	121.68	4.19	500.31	6.92
1978	1	190.12		848.30	5.91	558.16	211.77	98.30	6.70	27.24	1186.13
1978	2	31744.71		271.51	0.20	78.88	6.28	0.00	3.24	3483.62	1919.29
1978	3		22424.63	39.82	0.01	129.60	6.98	5.42	3.74	502.26	65.81
1978	4		5517.54	280.67	1.75	594.06	146.90	73.53	3.60	15.88	37.77
1979	1	453.92		791.96	10.43	521.09	213.74	140.79	13.48	136.14	654.31
1979	2	25174.55		253.48	1.14	73.64	4.74	4.22	6.56	1688.65	548.53
1979	3		13976.21	37.18	0.00	120.99	5.17	4.96	1.26	829.87	55.60
1979	4		5064.27	262.03	1.95	554.61	165.54	93.17	5.73	201.34	21.67
1980	1	279.80		900.99	28.61	592.83	178.32	69.40	3.74	20.48	674.64
1980	2	36428.52		288.38	5.53	83.78	4.91	2.55	3.99	1904.30	592.22
1980	3		7072.47	42.29	0.00	137.65	4.39	1.28	0.55	728.79	228.09
1980	4		2961.21	298.11	0.51	630.96	162.59	193.87	0.76	332.44	21.05
1981	1	167.45		880.70	22.14	579.48	231.84	134.64	9.46	48.45	400.49
1981	2	26384.43		281.89	0.38	81.89	12.22	0.69	5.45	4379.65	523.27
1981	3		414.29	41.34	0.00	134.55	17.92	4.61	0.29	5587.87	22.32
1981	4		459.83	291.39	6.01	616.75	252.80	164.97	2.21	332.04	12.92

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Table2 (continue)

		Fleet name in data preparatory meeting (Nov. 2013)									
Year	Season	JPN_PL_ Q12	JPN_PL_ Q34	JPN_LL_sm all_catchwt	JPN_LL_sm all_catchnum	JPN_LL_large_c atchwt	JPN_LL_large_c atchnum	JPN_EPO_LL _north	JPN_EPO_LL _south	JPN_GillNet	JPN_Misc
		Fleet name in stock assessment meeting (Apr. 2014)									
SS control file	F1_JPPL_ Q12_GN_J pmisc	F2_JPPL_ Q34	F3_JPPLS_ Q12 F4_JPPLS_ Q34	F5_JPPLS_ Q12 F6_JPPLS_ Q34	*1	*2	F24_JPPL_EP ON	F23_TWLLb_ EPOS	F1_JPPL_Q1 2_GN_Jpmis c	F1_JPPL_ Q12_GN_J pmisc	
1982	1	1001.91		1112.69	53.89	732.12	228.03	148.81	19.28	315.94	279.34
1982	2	26209.49		356.14	1.65	103.47	7.03	0.61	6.80	6888.34	636.24
1982	3		1309.75	52.23	0.00	169.99	26.43	0.72	0.18	3579.72	128.38
1982	4		1092.85	368.15	0.65	779.21	173.28	68.05	0.39	1726.99	10.04
1983	1	324.00		1153.27	38.49	758.83	138.39	83.22	4.10	475.46	68.84
1983	2	18306.76		369.13	4.36	107.24	7.25	0.39	7.34	3527.77	290.38
1983	3		1759.47	54.14	0.00	176.19	10.38	0.17	0.61	1431.71	105.65
1983	4		707.77	381.57	0.50	807.63	191.25	156.91	0.81	1417.07	6.13
1984	1	78.19		1014.87	21.14	667.76	123.35	185.07	5.26	834.87	293.69
1984	2	24456.39		324.83	1.12	94.37	7.82	0.03	5.09	4763.59	3463.70
1984	3		1422.32	47.64	0.08	155.05	15.37	0.39	0.02	2333.85	127.70
1984	4		56.11	335.78	1.60	710.71	151.39	169.52	2.50	1055.70	12.92
1985	1	197.11		1225.05	37.22	806.05	66.62	117.28	4.84	1739.58	231.46
1985	2	19455.14		392.10	1.07	113.91	6.09	0.01	6.67	7506.95	1666.95
1985	3		157.04	57.51	0.00	187.16	13.18	0.35	0.05	948.44	22.10
1985	4		904.71	405.32	4.57	857.90	184.47	167.84	2.05	1009.02	19.49
1986	1	84.90		1427.05	32.32	938.97	115.67	93.20	4.34	2453.58	371.14
1986	2	13501.01		456.76	1.34	132.70	11.59	0.14	2.60	4378.65	1641.31
1986	3		1991.46	66.99	0.00	218.02	17.71	0.36	0.12	608.14	171.14
1986	4		518.62	472.16	1.79	999.36	122.85	58.11	1.78	372.63	13.42
1987	1	102.90		1666.61	28.99	1096.59	70.00	63.89	2.43	2623.34	107.26
1987	2	18258.59		533.43	1.75	154.97	6.64	3.13	1.38	2884.45	1023.62
1987	3		616.41	78.23	0.00	254.62	15.54	0.26	0.74	923.42	257.03
1987	4		104.10	551.42	7.41	1167.12	195.34	119.32	3.14	266.78	6.09
1988	1	117.24		1691.44	37.78	1112.93	83.47	62.02	7.20	2164.44	100.34
1988	2	5346.65		541.38	4.23	157.28	8.86	0.00	3.64	5104.56	932.13
1988	3		724.02	79.40	0.06	258.42	12.31	0.54	0.60	834.09	348.35
1988	4		28.09	559.64	1.46	1184.52	194.71	114.88	5.24	970.91	4.19
1989	1	38.05		1426.75	24.78	938.77	109.97	88.15	2.95	1364.97	264.37
1989	2	7031.98		456.66	4.53	132.67	12.84	0.55	0.98	2917.18	2063.30
1989	3		1549.94	66.97	0.00	217.98	8.01	0.49	0.64	1204.09	645.54
1989	4		9.02	472.06	0.20	999.15	146.43	82.16	3.51	1950.76	13.79
1990	1	160.88		1972.49	37.01	1297.85	105.21	119.08	2.78	2944.14	143.35
1990	2	3908.95		631.33	4.56	183.42	5.29	0.16	3.23	2284.91	1695.59
1990	3		4298.21	92.59	0.00	301.35	8.53	0.00	0.32	346.58	404.03
1990	4		163.96	652.62	1.42	1381.33	173.54	101.28	1.97	488.36	5.03
1991	1	486.74		2018.22	26.80	1327.94	112.81	148.40	4.81	1327.85	226.01
1991	2	2994.22		645.97	5.87	187.67	6.32	0.01	4.40	1460.52	2361.65
1991	3		3319.11	94.74	0.18	308.34	12.68	0.04	1.01	36.90	456.14
1991	4		302.94	667.76	2.19	1413.36	159.46	106.25	2.90	575.73	7.20
1992	1	224.73		2433.74	31.85	1601.35	102.99	65.63	6.60	1212.11	868.88
1992	2	5106.93		778.97	11.90	226.31	5.46	0.00	1.55	981.26	1388.07
1992	3		8551.94	114.24	0.00	371.82	9.13	1.52	0.95	48.50	3354.03
1992	4		4.39	805.23	0.90	1704.35	231.02	172.55	3.14	479.14	27.02
1993	1	215.80		5024.66	84.88	3306.11	127.13	109.67	15.03	127.85	509.71
1993	2	6187.48		1608.24	26.02	467.23	6.84	0.00	2.58	103.50	1749.10
1993	3		6340.72	235.86	0.01	767.66	6.86	0.14	0.46	5.11	1515.11
1993	4		53.00	1662.47	2.47	3518.77	259.95	209.41	0.74	50.54	15.09
1994	1	121.50		4913.91	74.83	2825.07	191.47	135.31	20.50	165.74	790.85
1994	2	6187.64		1791.63	20.48	296.81	6.81	0.00	1.70	0.03	1219.63
1994	3		18873.99	231.99	0.01	905.68	14.41	1.79	1.84	16.27	790.33
1994	4		1205.87	1674.92	0.84	3725.99	282.71	86.34	13.76	80.96	59.19
1995	1	36.95		4982.52	16.07	3881.04	146.58	103.37	21.19	238.62	904.91
1995	2	3758.31		1275.50	11.97	374.56	10.82	0.08	5.37	0.00	1092.24
1995	3		15062.48	246.27	0.00	855.07	33.07	2.21	4.03	0.26	106.01
1995	4		2123.26	2278.06	0.29	3603.98	241.60	65.24	14.14	43.12	35.84
1996	1	129.03		4777.67	9.36	3463.90	169.73	107.91	8.93	76.64	773.13
1996	2	10556.81		1984.47	15.70	598.25	35.23	0.06	2.36	0.00	639.74
1996	3		9562.29	133.75	0.00	853.77	43.44	1.38	1.63	0.18	122.07
1996	4		23.86	1564.62	0.75	5250.58	232.58	103.99	9.85	39.18	31.07

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Table2 (continue)

Fleet name in data preparatory meeting (Nov. 2013)												
Year	Season	JPN_PL_ Q12	JPN_PL_ Q34	JPN_LL_sm all_catchwt	JPN_LL_sm all_catchnum	JPN_LL_large_c atchwt	JPN_LL_large_c atchnum	JPN_EPO_LL _north	JPN_EPO_LL _south	JPN_GillNet	JPN_Misc	
Fleet name in stock assessment meeting (Apr. 2014)												
SS control file	F1_JPPL_ Q12_GN_J pmisc	F2_JPPL_ Q34	F3_JPLLSw _Q12	F4_JPLLSw _Q34	F5_JPLLSn_ Q12	F6_JPLLSn_ Q34	*1	*2	F24_JPLL_EP ON	F23_TWLLb_ EPOS	F1_JPPL_Q1 2_GN_Jpmis c	F1_JPPL_ Q12_GN_J pmisc
1997	1	71.26		8771.68		14.23	5256.79	139.37	121.60	14.05	176.23	1612.32
1997	2	15227.43		2452.68		11.29	910.53	53.71	0.43	5.96	8.12	694.82
1997	3		13446.51	488.56		0.00	967.48	38.31	1.93	0.95	105.18	500.87
1997	4		3492.80	2239.75		1.90	3838.52	227.80	101.30	4.36	69.46	19.90
1998	1	650.87		7599.63		22.70	4837.80	138.78	72.93	4.49	52.15	1250.81
1998	2	8493.35		1935.77		13.19	1205.89	60.55	0.00	1.98	66.92	756.26
1998	3		13264.32	385.62		0.00	926.86	38.19	2.03	1.00	20.15	865.27
1998	4		517.46	2542.58		0.56	3968.85	229.17	71.88	11.69	66.77	16.65
1999	1	262.07		5214.89		12.37	3568.25	122.41	91.82	9.52	6.41	751.01
1999	2	24482.69		1762.00		7.33	722.14	63.54	0.00	2.84	8.21	3877.08
1999	3		19484.54	536.30		0.00	1544.21	52.89	4.50	0.81	28.36	3203.10
1999	4		6159.80	2831.12		1.36	5040.09	225.62	61.23	11.52	246.02	83.81
2000	1	35.01		5091.96		10.10	4868.25	129.47	88.79	1.46	3.29	685.42
2000	2	6055.32		1782.26		4.57	1677.98	68.51	0.00	0.77	0.30	1315.14
2000	3		14282.20	448.97		0.00	1088.36	47.31	0.52	0.29	26.34	1253.60
2000	4		1176.97	1155.34		0.01	3114.88	169.11	19.08	3.30	37.08	20.84
2001	1	17.84		3876.45		5.50	5266.71	142.74	63.27	6.84	51.38	177.64
2001	2	9423.67		1844.47		1.06	1464.50	66.55	0.00	7.90	32.62	726.12
2001	3		19287.18	181.25		0.00	791.23	46.31	0.09	0.13	0.17	558.11
2001	4		701.12	1302.21		0.58	2812.18	175.81	47.93	1.49	32.84	41.13
2002	1	8.33		5592.73		17.86	4228.91	104.05	66.21	2.31	151.39	344.46
2002	2	16086.25		1345.92		2.72	1676.43	39.11	0.00	1.54	64.49	729.28
2002	3		31283.92	346.32		0.00	506.67	9.13	0.09	0.01	3.84	3122.41
2002	4		1075.50	1472.73		0.56	1748.28	94.63	13.18	0.45	112.28	87.95
2003	1	8.46		5238.56		5.82	4213.10	76.54	8.43	7.82	77.76	993.05
2003	2	8679.29		1540.55		0.52	1435.27	22.76	0.02	0.94	28.79	70.46
2003	3		15654.91	40.10		0.00	704.23	13.50	0.15	0.16	0.17	23.94
2003	4		11772.29	1183.03		1.15	1954.16	99.24	17.87	0.14	19.29	615.54
2004	1	2178.66		4026.41		14.82	2284.57	62.83	8.33	4.29	42.80	231.99
2004	2	27892.49		916.45		0.82	725.05	23.35	0.05	0.25	5.23	7724.26
2004	3		2159.83	168.79		0.00	515.64	6.24	0.26	0.20	0.41	17.62
2004	4		24.03	1516.85		0.00	2806.24	108.93	4.74	0.44	12.56	82.14
2005	1	89.01		3876.57		2.81	3182.44	80.16	7.09	9.96	7.01	587.18
2005	2	4996.09		1012.78		1.14	2303.76	46.96	0.01	1.50	110.40	1062.84
2005	3		9872.39	259.57		0.02	729.76	16.16	0.15	0.32	34.34	122.81
2005	4		1175.40	1381.10		0.00	2507.02	93.94	15.94	0.67	2.25	73.27
2006	1	7.82		4011.00		1.82	3197.09	69.74	7.54	5.54	3.28	176.61
2006	2	11505.62		1641.23		1.12	2256.61	39.43	0.10	1.01	114.22	559.64
2006	3		3025.42	105.23		0.00	424.11	11.26	0.36	0.02	56.98	174.26
2006	4		860.84	1118.38		0.33	3839.35	91.38	1.76	0.06	46.53	10.49
2007	1	121.50		4847.21		2.94	4124.99	74.13	2.71	4.42	31.43	138.69
2007	2	35150.51		1288.50		0.24	2255.95	38.08	0.01	0.73	146.11	6112.09
2007	3		2492.37	78.12		0.00	513.78	11.57	0.06	0.07	0.60	8.44
2007	4		3.61	1732.69		1.21	3522.75	89.06	0.97	0.47	47.85	15.78
2008	1	155.44		3752.02		1.78	3202.26	90.56	48.98	15.30	15.10	506.47
2008	2	16406.03		1246.45		1.34	1559.69	46.88	0.00	1.48	895.95	824.86
2008	3		2497.55	215.32		0.01	561.10	23.68	0.05	0.03	581.32	73.46
2008	4		0.98	1019.60		0.45	2120.56	63.49	2.48	0.62	38.63	85.21
2009	1	37.83		4076.44		3.68	3268.72	75.02	1.11	2.35	22.60	329.20
2009	2	29264.69		1908.34		1.25	1792.51	26.96	0.01	0.16	116.45	1866.81
2009	3		1477.73	124.13		0.00	848.24	16.73	0.69	0.01	2.13	345.53
2009	4		391.75	2401.98		4.93	3754.63	62.05	0.86	0.04	7.81	20.46
2010	1	176.15		4408.13		10.83	4447.48	55.72	0.03	3.52	5.83	563.98
2010	2	13126.52		796.64		3.02	2413.60	40.63	0.00	0.43	10.35	209.12
2010	3		5939.92	45.90		0.02	1108.27	13.42	0.13	0.00	0.68	189.11
2010	4		318.41	927.77		2.39	3076.21	70.80	0.10	0.22	7.14	34.79
2011	1	421.12		3910.34		14.74	3137.51	72.71	1.57	3.22	4.55	502.00
2011	2	20092.04		898.87		3.00	1908.98	32.02	0.00	0.33	7.09	433.05
2011	3		5187.67	52.74		0.00	598.33	13.96	0.22	0.13	0.01	73.38
2011	4		4.16	1722.16		2.67	3869.07	114.46	0.27	0.22	0.35	42.57
2012	1	9.18		6023.36		22.87	3690.31	65.49	0.01	8.92	10.02	455.54
2012	2	18717.85		1085.56		4.16	1818.78	41.05	0.00	0.34	1.45	429.26
2012	3		7922.70	10.31		0.00	643.76	16.63	0.04	0.06	0.04	116.92
2012	4		466.77	624.08		0.64	2393.83	101.94	0.02	8.38	0.49	49.29

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Table 3 Catch time series for JPN LL-large split by boundary for 20N.

fishery name		F6 (20-55N)	F6 (10-20N)	F7 (20-55N)	F7 (10-20N)
(data preparatory meeting)		JPN_LL_large_catchwt	JPN_LL_large_catchwt	JPN_LL_large_catchnum	JPN_LL_large_catchnum
fishery name		F12_JPLLLNw_Q14_KR_7593	F16_JPLLLSw_Q14	F14_JPLLLNn_Q14_7593	F18_JPLLLSn_Q14
(stock assessment meeting)		F13_JPLLLNw_Q23_7593	F17_JPLLLSw_Q23	F15_JPLLLNn_Q23_7593	F19_JPLLLSn_Q23
1966	1	55.3	5.9	541.9	11.0
1966	2	6.5	2.2	50.8	2.4
1966	3	10.0	4.2	15.7	2.3
1966	4	63.9	1.2	291.1	32.1
1967	1	68.1	7.2	1015.5	8.1
1967	2	8.0	2.7	61.6	3.9
1967	3	12.3	5.2	12.0	2.9
1967	4	78.6	1.5	349.1	15.6
1968	1	150.0	16.0	810.5	16.4
1968	2	17.6	5.9	28.0	9.9
1968	3	27.0	11.5	9.7	6.9
1968	4	173.3	3.4	181.2	16.3
1969	1	167.7	17.8	425.4	18.6
1969	2	19.7	6.6	12.7	10.7
1969	3	30.2	12.9	10.8	1.8
1969	4	193.7	3.8	198.4	21.8
1970	1	304.6	32.4	316.2	22.8
1970	2	35.7	11.9	4.3	10.5
1970	3	54.9	23.4	6.1	8.5
1970	4	351.8	6.8	91.0	16.7
1971	1	304.6	32.4	213.9	19.1
1971	2	35.7	11.9	2.7	3.9
1971	3	54.9	23.4	4.9	1.2
1971	4	351.8	6.8	92.5	19.8
1972	1	498.5	53.0	136.8	18.7
1972	2	58.5	19.5	1.7	4.2
1972	3	89.8	38.2	4.0	1.9
1972	4	575.9	11.2	60.4	27.5
1973	1	813.6	86.6	87.1	13.8
1973	2	95.4	31.8	3.1	2.5
1973	3	146.6	62.4	4.9	1.8
1973	4	939.8	18.3	125.8	16.9
1974	1	561.0	59.7	119.5	35.5
1974	2	65.8	21.9	2.6	12.8
1974	3	101.1	43.0	7.0	14.4
1974	4	648.1	12.6	72.6	25.9
1975	1	558.3	59.4	76.2	16.5
1975	2	65.5	21.8	1.3	2.0
1975	3	100.6	42.8	3.8	12.4
1975	4	644.9	12.5	122.5	27.2
1976	1	681.0	72.5	174.2	18.3
1976	2	79.9	26.6	1.8	4.5
1976	3	122.7	52.2	6.3	5.8
1976	4	786.6	15.3	182.2	15.3
1977	1	751.6	80.0	234.6	9.4
1977	2	88.2	29.4	1.4	2.7
1977	3	135.4	57.7	2.4	1.8
1977	4	868.2	16.9	145.5	5.3
1978	1	504.5	53.7	202.3	9.5
1978	2	59.2	19.7	2.1	4.2
1978	3	90.9	38.7	1.3	5.6
1978	4	582.7	11.3	137.6	9.3
1979	1	471.0	50.1	209.2	4.5
1979	2	55.2	18.4	2.0	2.7
1979	3	84.9	36.1	4.4	0.7
1979	4	544.0	10.6	159.2	6.3

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Table 3 (Continued)

fishery name		F6 (20-55N)	F6 (10-20N)	F7 (20-55N)	F7 (10-20N)
(data preparatory meeting)		JPN_LL_large_catchwt	JPN_LL_large_catchwt	JPN_LL_large_catchnum	JPN_LL_large_catchnum
fishery name		F12_JPLLLNw_Q14_KR_7593	F16_JPLLLSw_Q14	F14_JPLLLNn_Q14_7593	F18_JPLLLSn_Q14
(stock assessment meeting)		F13_JPLLLNw_Q23_7593	F17_JPLLLSw_Q23	F15_JPLLLNn_Q23_7593	F19_JPLLLSn_Q23
1980	1	535.8	57.0	160.0	18.3
1980	2	62.8	20.9	2.0	2.9
1980	3	96.5	41.1	3.7	0.7
1980	4	618.9	12.0	160.2	2.4
1981	1	523.8	55.7	217.6	14.2
1981	2	61.4	20.5	3.1	9.1
1981	3	94.4	40.2	14.9	3.0
1981	4	605.0	11.8	245.4	7.4
1982	1	661.7	70.4	193.6	34.5
1982	2	77.6	25.9	2.3	4.7
1982	3	119.2	50.8	24.4	2.1
1982	4	764.4	14.8	172.3	1.0
1983	1	685.9	73.0	134.7	3.7
1983	2	80.4	26.8	2.8	4.4
1983	3	123.6	52.6	5.4	5.0
1983	4	792.2	15.4	186.9	4.3
1984	1	603.5	64.2	117.5	5.9
1984	2	70.8	23.6	2.9	4.9
1984	3	108.7	46.3	12.6	2.8
1984	4	697.2	13.5	146.3	5.1
1985	1	728.5	77.5	62.7	3.9
1985	2	85.4	28.5	1.3	4.8
1985	3	131.3	55.9	11.5	1.6
1985	4	841.6	16.3	180.9	3.6
1986	1	848.7	90.3	104.2	11.4
1986	2	99.5	33.2	3.0	8.5
1986	3	152.9	65.1	14.6	3.1
1986	4	980.3	19.0	120.3	2.5
1987	1	991.1	105.5	65.6	4.4
1987	2	116.2	38.7	2.8	3.9
1987	3	178.6	76.0	13.8	1.8
1987	4	1144.9	22.2	191.6	3.8
1988	1	1005.9	107.0	78.3	5.2
1988	2	118.0	39.3	5.7	3.1
1988	3	181.2	77.2	9.6	2.8
1988	4	1161.9	22.6	190.7	4.0
1989	1	848.5	90.3	108.1	1.8
1989	2	99.5	33.2	10.5	2.3
1989	3	152.9	65.1	7.2	0.8
1989	4	980.1	19.0	145.9	0.5
1990	1	1173.0	124.8	104.5	0.7
1990	2	137.6	45.8	4.7	0.6
1990	3	211.4	90.0	8.3	0.2
1990	4	1355.0	26.3	172.7	0.9
1991	1	1200.2	127.7	106.4	6.4
1991	2	140.8	46.9	2.8	3.5
1991	3	216.3	92.1	11.7	1.0
1991	4	1386.4	26.9	158.7	0.7
1992	1	1447.4	154.0	102.1	0.9
1992	2	169.8	56.6	4.8	0.7
1992	3	260.8	111.0	7.6	1.5
1992	4	1671.9	32.5	230.4	0.6

¹This working paper was submitted to the ISC Albacore Working Group Intercessional Workshop, 14-18 April 2014, held at the Southwest Fisheries Science Center, La Jolla, California, USA. Document not to be cited without the author's permission.

Procedure for developing quarterly catch data of JPN LL-small (fleet ID 3) and JPN LL-large (fleet ID 6) of Japanese coastal longline vessel (1994-)

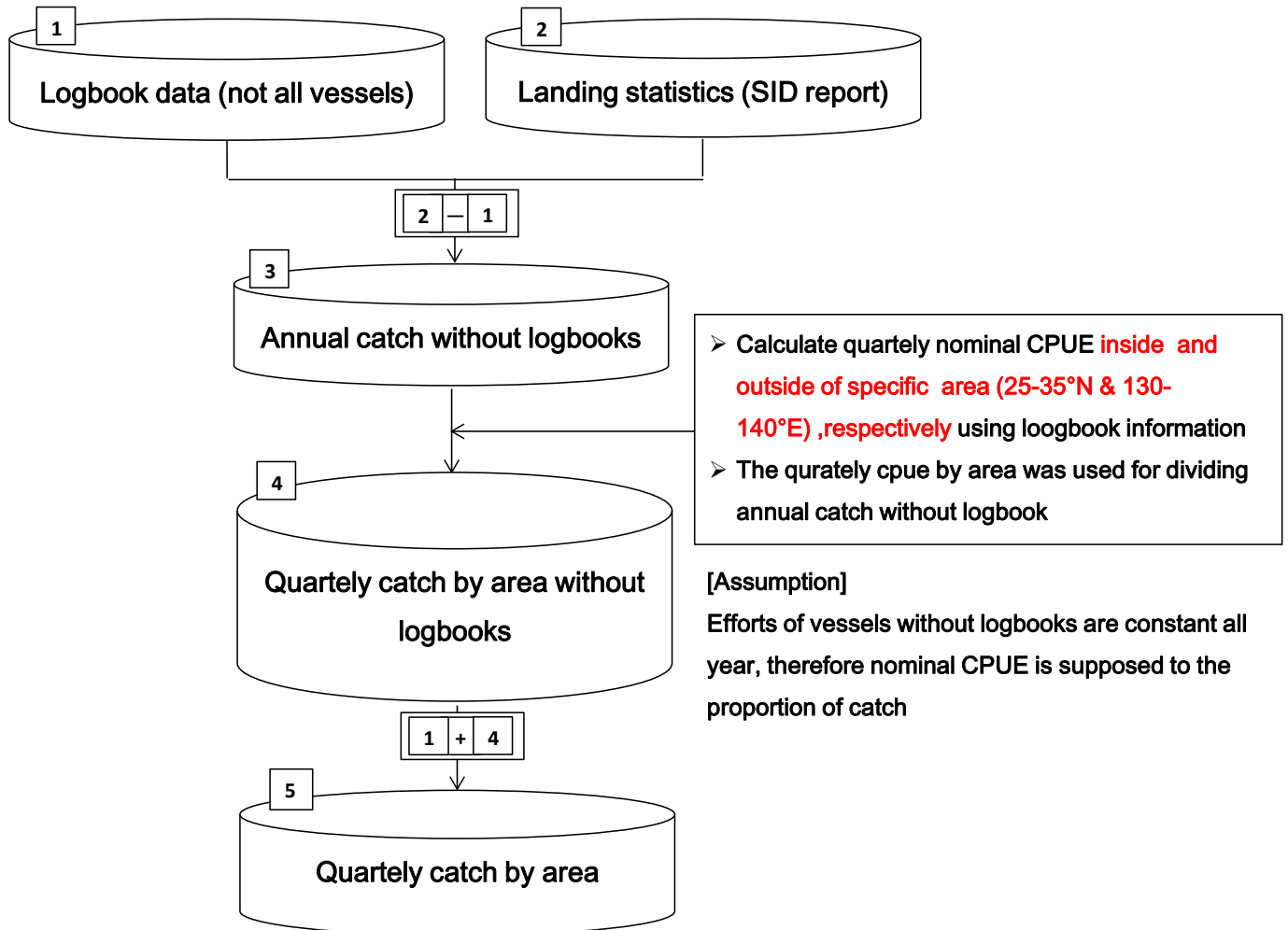


Fig. 1 Schematic diagram for creating JPN LL-small (fleet ID 3) and JPN LL-large (fleet ID 4) of Japanese coastal longline vessel. Red letters represent modification from previous method (Matsumoto et al 2013). The modification is due to the change of the fishery definition of the Japanese longline for albacore stock assessment.

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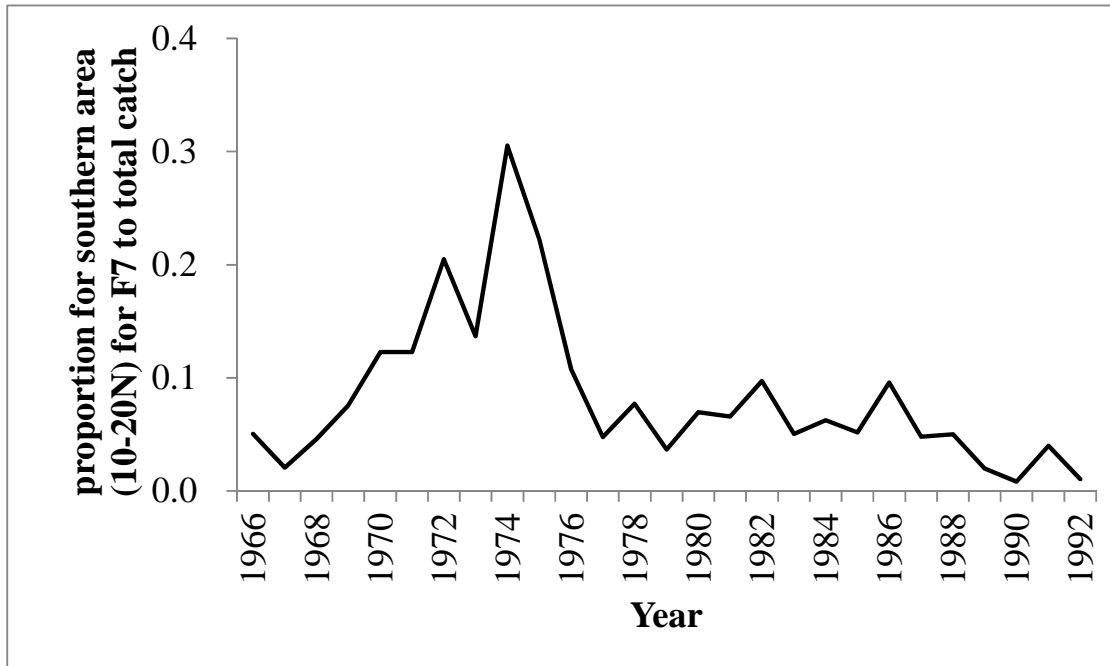


Fig. 2 Historical changes of catch proportion in southern area (10-20N & 130W-180) to total catch (10-55N & 130W-180) in number base (F7_JP_LLL_num; see Table 1).

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