

Table S1. Summary of electronic tags (pop-up satellite tag: PSAT and smart position or temperature tag: SPOT), which successfully transmitted data via the Argos system, for blue sharks in the northwestern Pacific. PCL: precaudal length.

Shark	Tag ID	Sex	PCL (cm)	Maturity	Tag type	Deployment Start	Deployment End	Programmed Release (days)	Track Duration (days)
1	152095	Female	180.4	Adult	PSAT	04-Oct-15	26-Mar-16	180	174
2	152096	Female	157.9	Adult	PSAT	04-Oct-15	29-Oct-15	180	25
3	152097	Female	174.1	Adult	PSAT	04-Oct-15	31-May-16	240	240
4	152098	Female	160.5	Adult	PSAT	04-Oct-15	04-Jan-16	240	92
5	152100	Female	177.8	Adult	PSAT	04-Oct-15	30-Dec-15	240	87
6	152101	Male	156.9	Juvenile	PSAT	05-Oct-15	01-Nov-15	180	27
7	152102	Male	165.4	Adult	PSAT	09-Oct-15	19-Oct-15	180	10
8	152105	Female	222.3	Adult	PSAT	13-Oct-15	07-Feb-16	240	117
9	152106	Male	185.5	Adult	PSAT	15-Oct-15	29-Oct-15	180	14
10	152108	Female	209.2	Adult	PSAT	15-Oct-15	20-Oct-15	240	5
11	162128	Female	196.1	Adult	PSAT	08-Oct-16	20-Nov-16	240	43
12	162129	Male	198.1	Adult	PSAT	04-Oct-16	20-Nov-16	240	47
13	162130	Male	180.5	Adult	PSAT	03-Oct-16	17-Dec-16	240	75
14	162131	Female	196.1	Adult	PSAT	07-Oct-16	13-Nov-16	240	37
15	162132	Male	183.0	Adult	PSAT	03-Oct-16	10-Feb-17	240	130
16	162133	Female	230.2	Adult	PSAT	11-Oct-16	15-Jun-17	240	247

Shark	Tag ID	Sex	PCL (cm)	Maturity	Tag type	Deployment Start	Deployment End	Programmed Release (days)	Track Duration (days)
17	162134	Female	177.8	Adult	PSAT	05-Oct-16	04-Jan-17	240	90
18	162135	Female	162.1	Adult	PSAT	07-Oct-16	20-Mar-17	240	163
19	162136	Female	206.6	Adult	PSAT	07-Oct-16	27-Nov-16	240	51
20	162137	Male	188.0	Adult	PSAT	05-Oct-16	08-Dec-16	240	64
21	162139	Male	233.2	Adult	PSAT	04-Oct-16	13-Feb-17	240	132
22	162140	Male	203.1	Adult	PSAT	03-Oct-16	12-Nov-16	240	39
23	162141	Female	159.4	Adult	PSAT	07-Oct-16	24-Feb-17	240	140
24	162144	Female	141.1	Adult	PSAT	07-Oct-16	03-Dec-16	240	57
25	162146	Female	188.3	Adult	PSAT	07-Oct-16	25-Nov-16	240	49
26	162147	Male	190.5	Adult	PSAT	04-Oct-16	23-May-17	240	231
27	170052	Female	224.9	Adult	PSAT	19-May-17	06-Sep-17	240	110
28	170054	Male	185.5	Adult	PSAT	18-May-17	05-Jul-17	240	47
29	170055	Female	169.9	Adult	PSAT	20-May-17	19-Jun-17	240	30
30	170057	Female	172.5	Adult	PSAT	28-May-17	02-Oct-17	240	127
31	170059	Female	243.3	Adult	PSAT	20-May-17	27-Aug-17	240	99
32	170060	Male	155.4	Juvenile	PSAT	26-May-17	09-Aug-17	240	75
33	170061	Male	157.9	Juvenile	PSAT	18-May-17	04-Jul-17	240	46
34	170062	Female	224.9	Adult	PSAT	26-May-17	25-Aug-17	240	92

Shark	Tag ID	Sex	PCL (cm)	Maturity	Tag type	Deployment Start	Deployment End	Programmed Release (days)	Track Duration (days)
35	170063	Male	190.5	Adult	PSAT	21-May-17	15-Jul-17	240	55
36	170064	Male	120.3	Juvenile	PSAT	18-May-17	23-Aug-17	240	96
37	170068	Male	145.4	Juvenile	PSAT	26-May-17	26-Jan-18	240	245
38	170069	Female	138.5	Juvenile	PSAT	26-May-17	07-Aug-17	240	73
39	170070	Male	168.0	Juvenile	PSAT	18-May-17	30-Jan-18	240	257
40	170071	Male	142.9	Juvenile	PSAT	26-May-17	26-May-17	240	0
41	170072	Male	160.4	Juvenile	PSAT	26-May-17	11-Jun-17	240	16
42	170073	Male	145.4	Adult	PSAT	26-May-17	19-Jun-17	240	24
43	170074	Male	215.6	Adult	PSAT	26-May-17	18-Oct-17	240	145
44	170075	Male	215.6	Adult	PSAT	27-May-17	12-Oct-17	240	138
45	170076	Male	168.0	Adult	PSAT	21-May-17	17-Jun-17	240	27
46	170077	Male	157.9	Juvenile	PSAT	26-May-17	04-Nov-17	240	162
47	53420	Male	165.4	Adult	PSAT	23-May-18	16-Oct-18	270	146
48	53422	Male	150.4	Juvenile	PSAT	24-May-18	18-Feb-19	270	270
49	53424	Male	183.0	Adult	PSAT	16-May-18	24-Sep-18	270	132
50	53439	Female	164.7	Adult	PSAT	23-May-18	26-Oct-18	270	157
51	53442	Male	152.9	Juvenile	PSAT	24-May-18	03-Oct-18	270	132
52	53485	Male	150.4	Juvenile	PSAT	22-May-18	21-Jul-18	270	60

Shark	Tag ID	Sex	PCL (cm)	Maturity	Tag type	Deployment Start	Deployment End	Programmed Release (days)	Track Duration (days)
53	53486	Male	157.9	Juvenile	PSAT	20-May-18	14-Feb-19	270	270
54	53488	Male	160.4	Juvenile	PSAT	18-May-18	24-Jun-18	270	38
55	53489	Female	156.8	Adult	PSAT	23-May-18	25-Jul-18	270	64
56	53491	Male	175.5	Adult	PSAT	20-May-18	12-Aug-18	270	84
57	53501	Male	122.8	Juvenile	PSAT	12-May-18	28-May-18	270	16
58	53503	Female	109.7	Juvenile	PSAT	12-May-18	07-Feb-19	270	271
59	53516	Male	135.3	Juvenile	PSAT	12-May-18	11-Jul-18	270	60
60	53518	Male	145.4	Juvenile	PSAT	12-May-18	24-Sep-18	270	135
61	53523	Male	130.3	Juvenile	PSAT	12-May-18	07-Feb-19	270	271
62	53525	Male	170.5	Adult	PSAT	17-May-18	21-Aug-18	270	97
63	53526	Male	170.5	Adult	PSAT	16-May-18	16-Jul-18	270	61
64	53528	Male	155.4	Juvenile	PSAT	20-May-18	13-Jul-18	270	54
65	53529	Male	145.4	Juvenile	PSAT	22-May-18	22-May-18	270	0
66	53530	Male	193.1	Adult	PSAT	16-May-18	08-Aug-18	270	84
67	53531	Male	150.4	Juvenile	PSAT	23-May-18	11-Sep-18	270	112
68	53532	Male	188.0	Adult	PSAT	22-May-18	29-Jun-18	270	38
69	53533	Male	160.4	Juvenile	PSAT	22-May-18	20-Oct-18	270	151
70	54328	Male	183.0	Adult	PSAT	17-May-18	01-Jul-18	270	46

Shark	Tag ID	Sex	PCL (cm)	Maturity	Tag type	Deployment Start	Deployment End	Programmed Release (days)	Track Duration (days)
71	179142	Male	190.5	Adult	PSAT	20-Apr-19	17-Dec-19	240	241
72	179143	Male	203.1	Adult	PSAT	20-Apr-19	03-Nov-19	240	197
73	179149	Male	173.0	Adult	Double: PSAT	27-May-19	18-Sep-19	240	114
	179165				Double: SPOT	27-May-19	26-Nov-19		184
74	179151	Female	164.7	Adult	Double: PSAT	27-May-19	20-Nov-19	240	177
	179162				Double: SPOT	27-May-19	13-Nov-19		170
75	179152	Female	159.4	Adult	Double: PSAT	27-May-19	21-Jul-19	240	58
	179161				Double: SPOT	27-May-19	31-Oct-19		158
76	179154	Male	188.0	Adult	SPOT	25-May-19	12-Jul-19		48
77	179155	Male	175.5	Adult	SPOT	25-May-19	25-Jul-19		61
78	179156	Female	162.1	Adult	SPOT	25-May-19	24-Jan-20		244
79	179157	Male	NA	NA	SPOT	25-May-19	13-Dec-19		203
80	179158	Male	165.4	Adult	SPOT	25-May-19	14-Jan-20		234
81	179160	Male	188.0	Adult	SPOT	25-May-19	14-Oct-19		142
82	179164	Male	150.4	Juvenile	SPOT	27-May-19	05-Oct-19		131

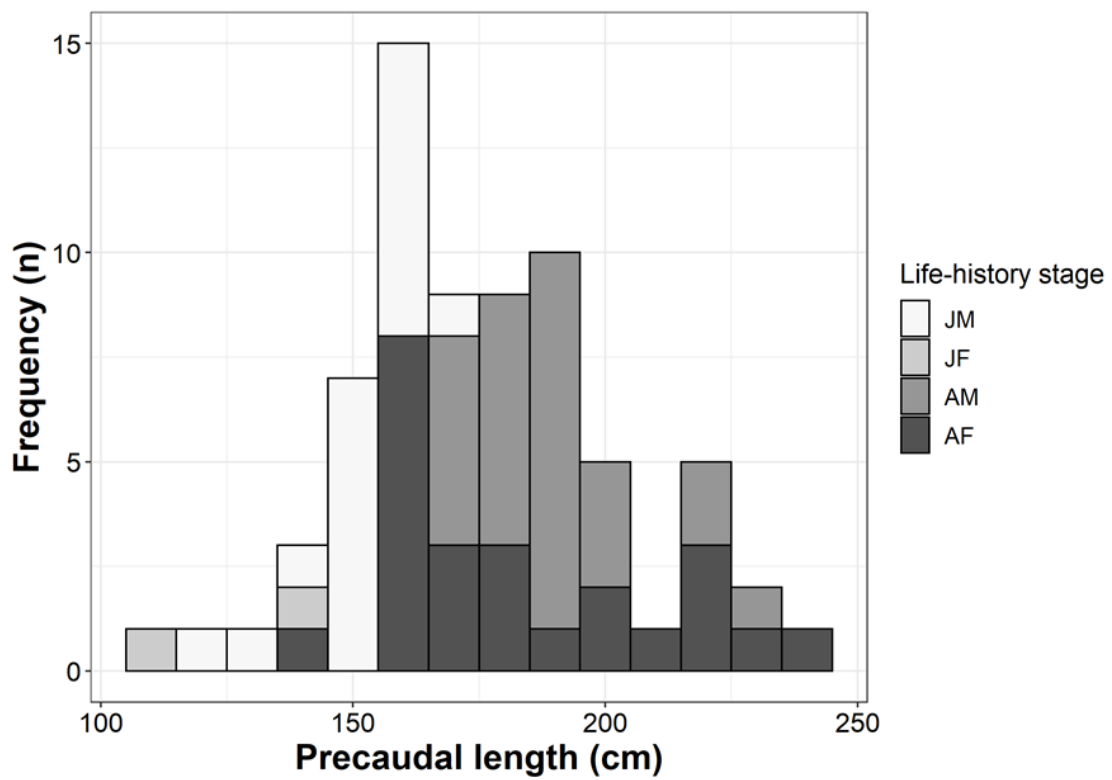


Fig. S1. Size frequency distribution for blue sharks in the northwestern Pacific tagged between 2015 and 2019. JM: juvenile male; JF: juvenile female; AM: adult male; and AF: adult female.

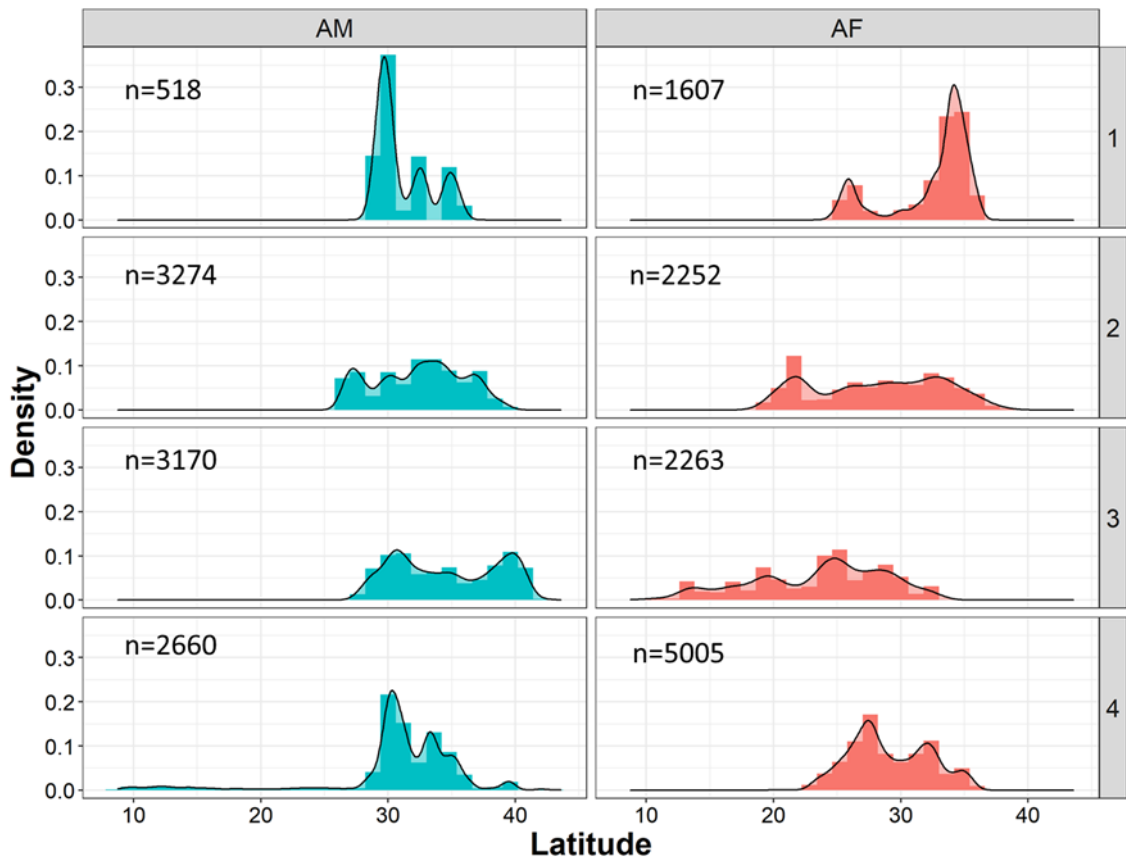


Fig. S2. Quarterly density plots and histograms of tracked latitude for tagged adult blue sharks in the northwestern Pacific. AM: adult males; AF: adult females

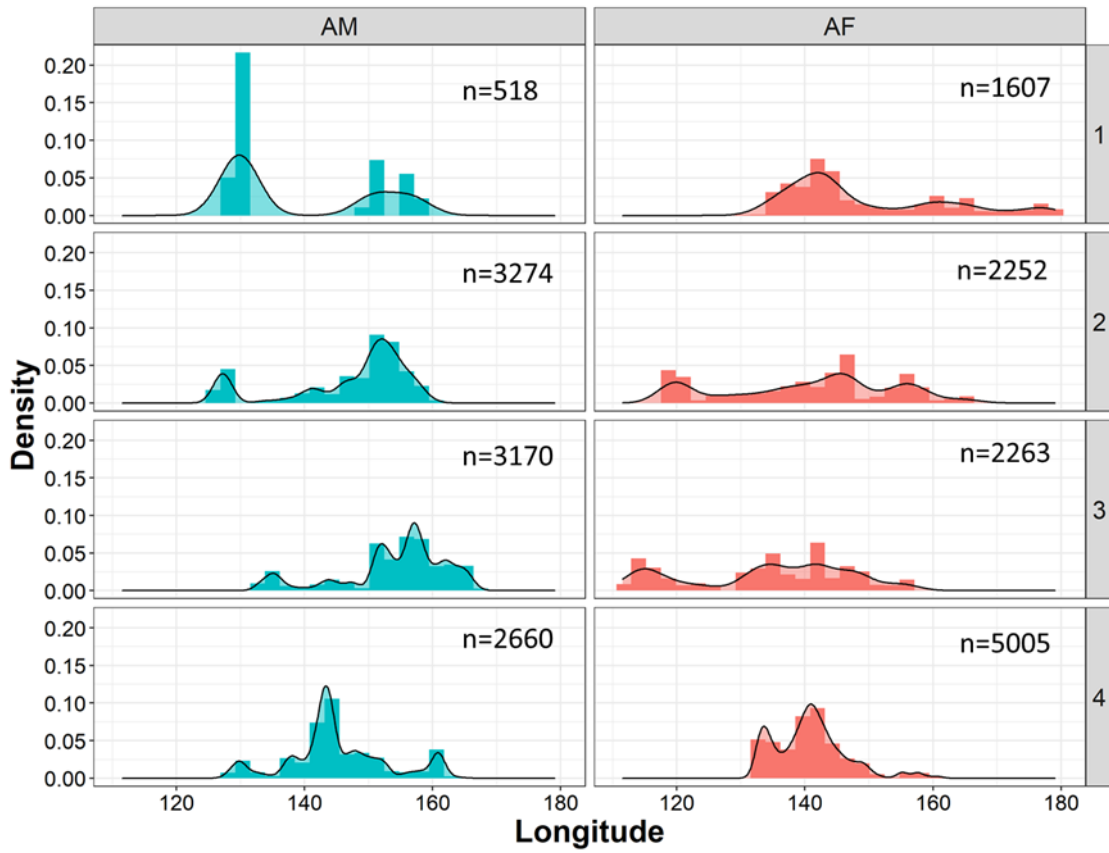


Fig. S3. Quarterly density plots and histograms of tracked longitude for tagged adult blue sharks in the northwestern Pacific. AM: adult males; AF: adult females

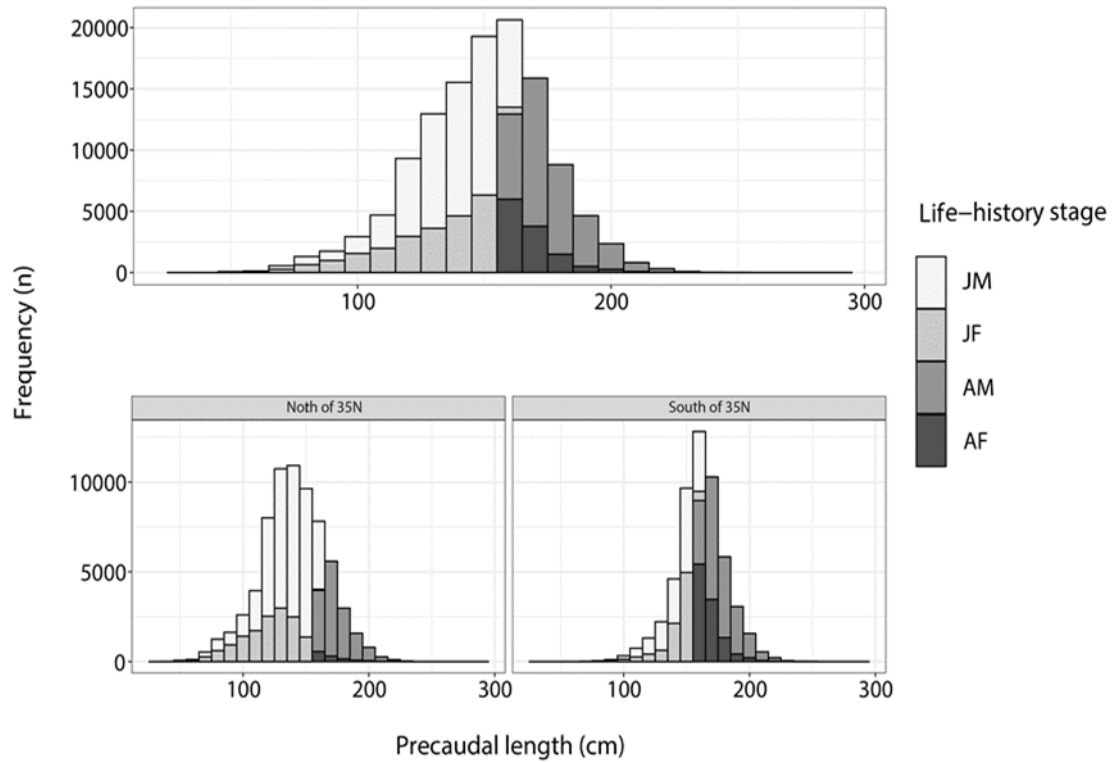


Fig. S4. Size frequency distribution for blue sharks in the northwestern Pacific recorded in the size-measurement dataset. JM: juvenile males; JF: juvenile females; AM: adult males; AF: adult females.

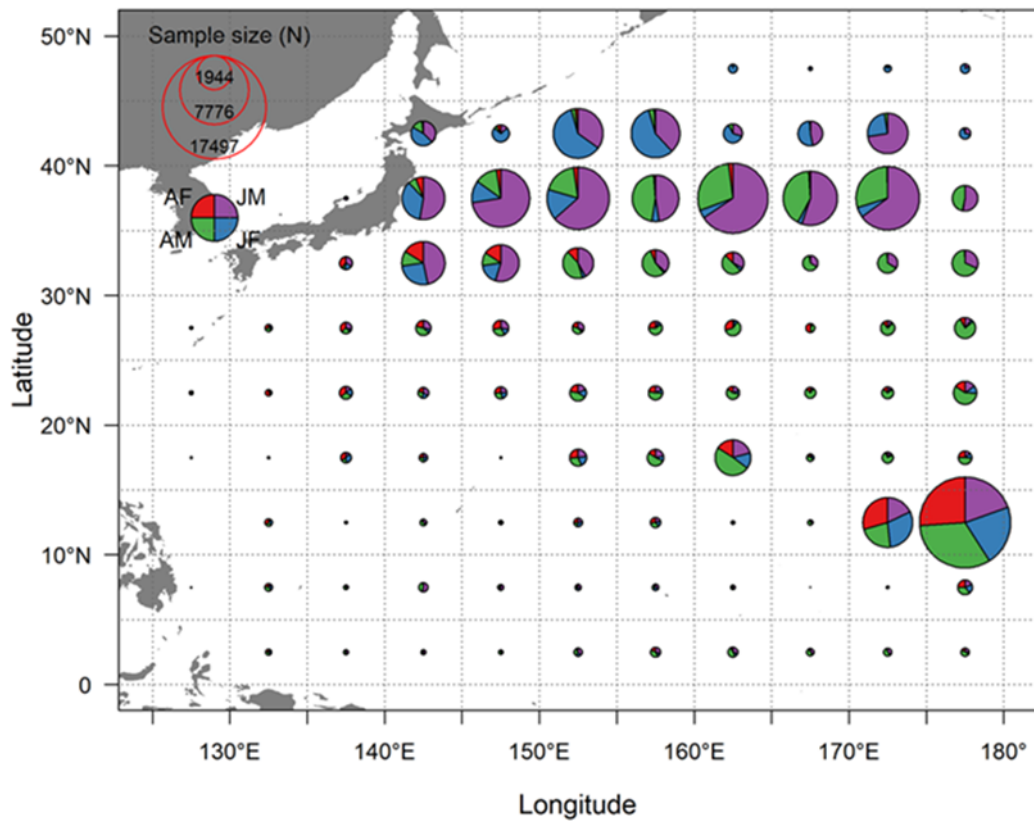


Fig. S5. Distribution of catches by life-history stage (juvenile male: JM, juvenile female: JF, adult male: AM, adult female: AF) for blue sharks in the northwestern Pacific recorded in the size-measurement dataset. The circle sizes are proportional to the observed number of blue sharks in each $5 \times 5^\circ$ area.

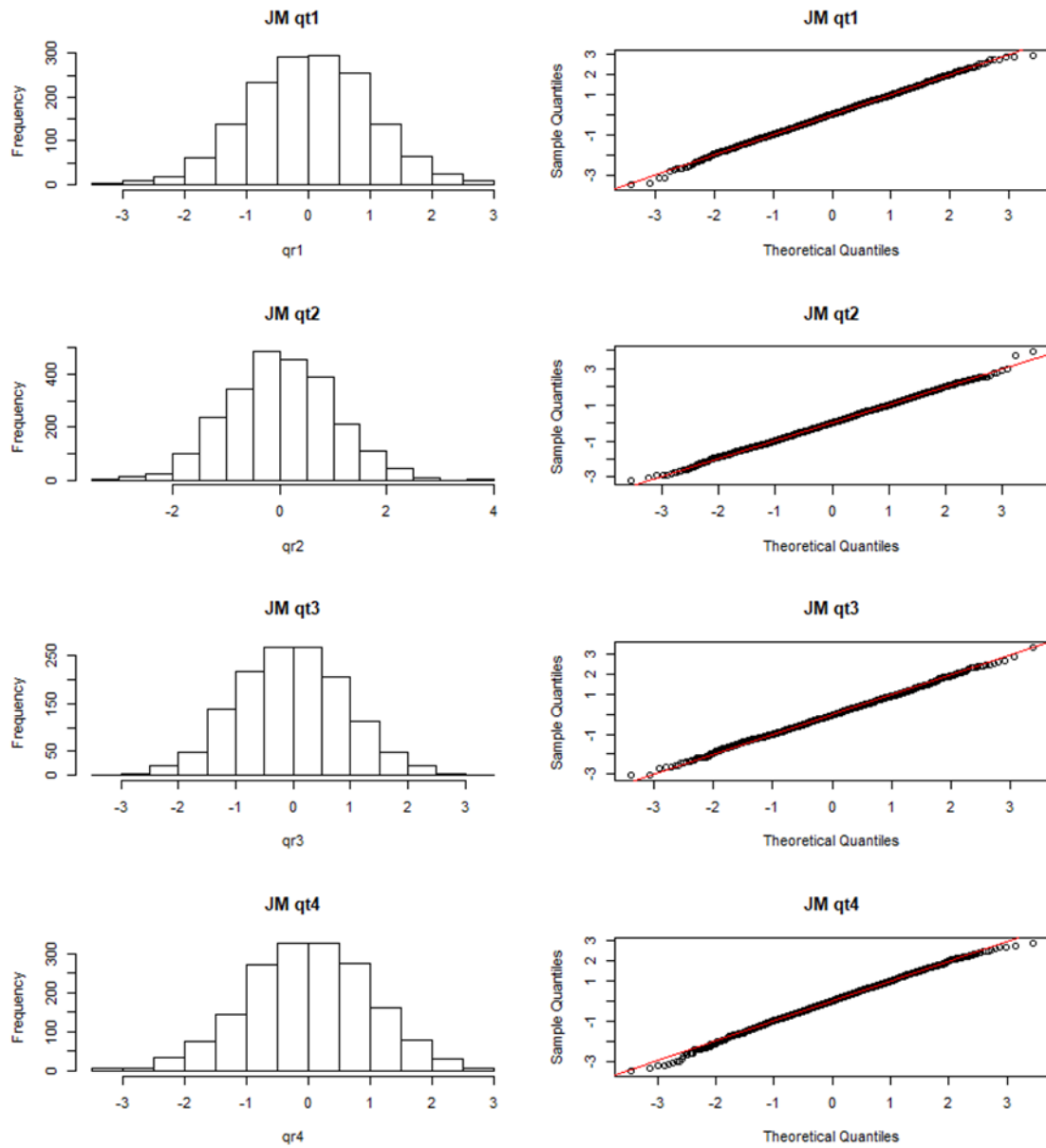


Fig. S6. Diagnostic plots (histogram of residuals and Q-Q plot) for the generalized additive model on presence or absence of juvenile male (JM) blue sharks by season

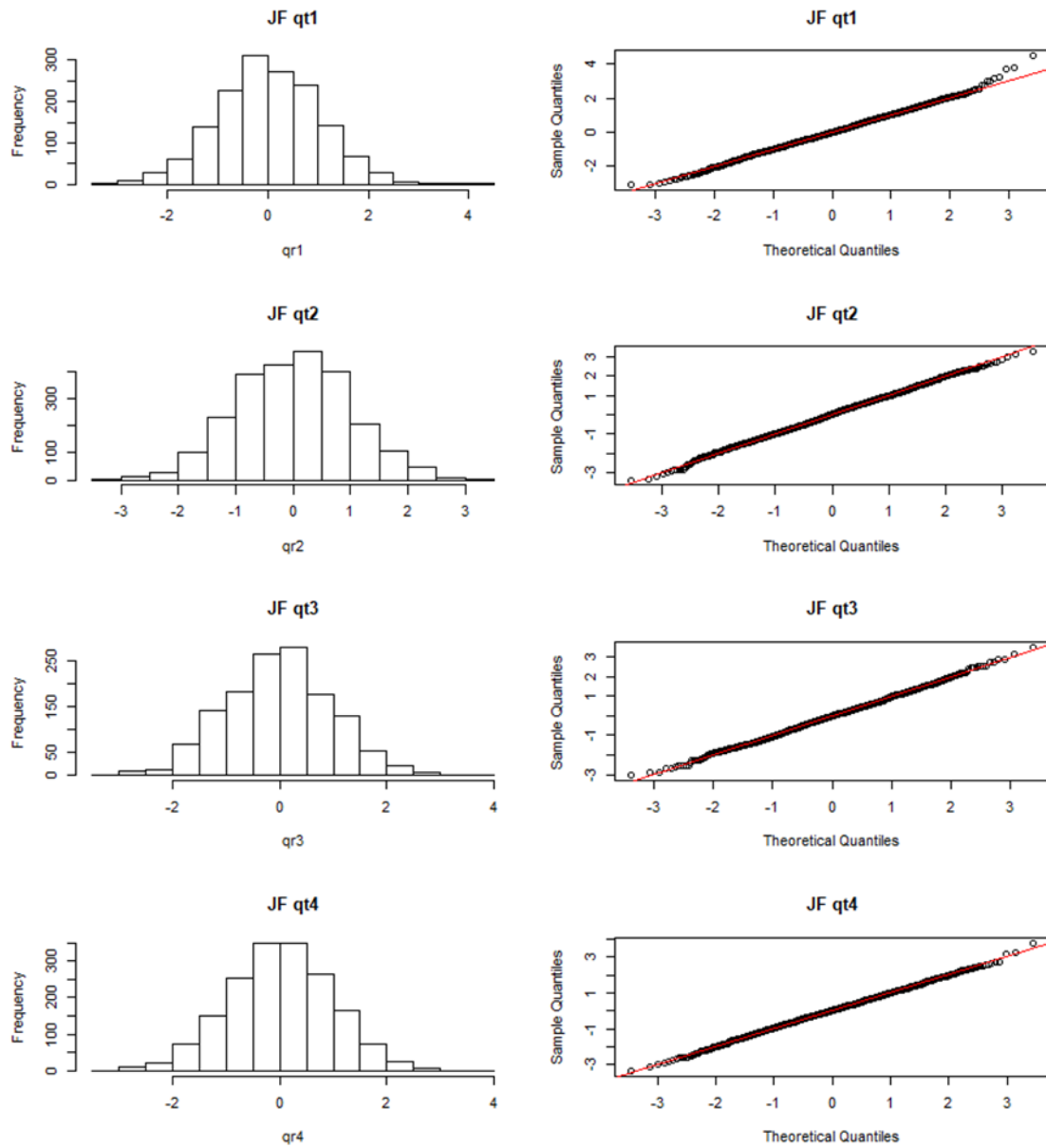


Fig. S7. Diagnostic plots (histogram of residuals and Q-Q plot) for the generalized additive model on presence or absence of juvenile female (JF) blue sharks by season

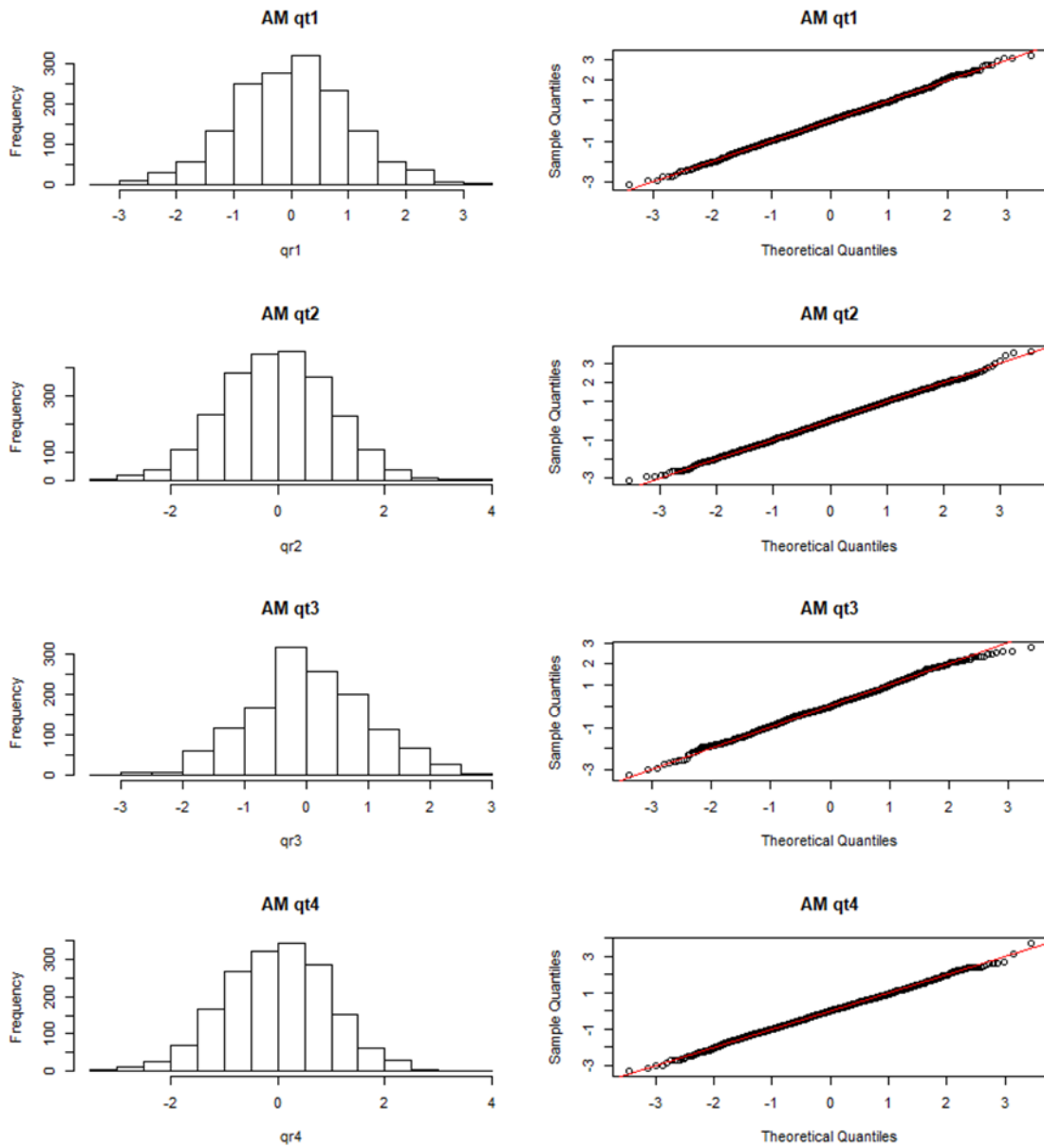


Fig. S8. Diagnostic plots (histogram of residuals and Q-Q plot) for the generalized additive model on presence or absence of adult male (AM) blue sharks by season

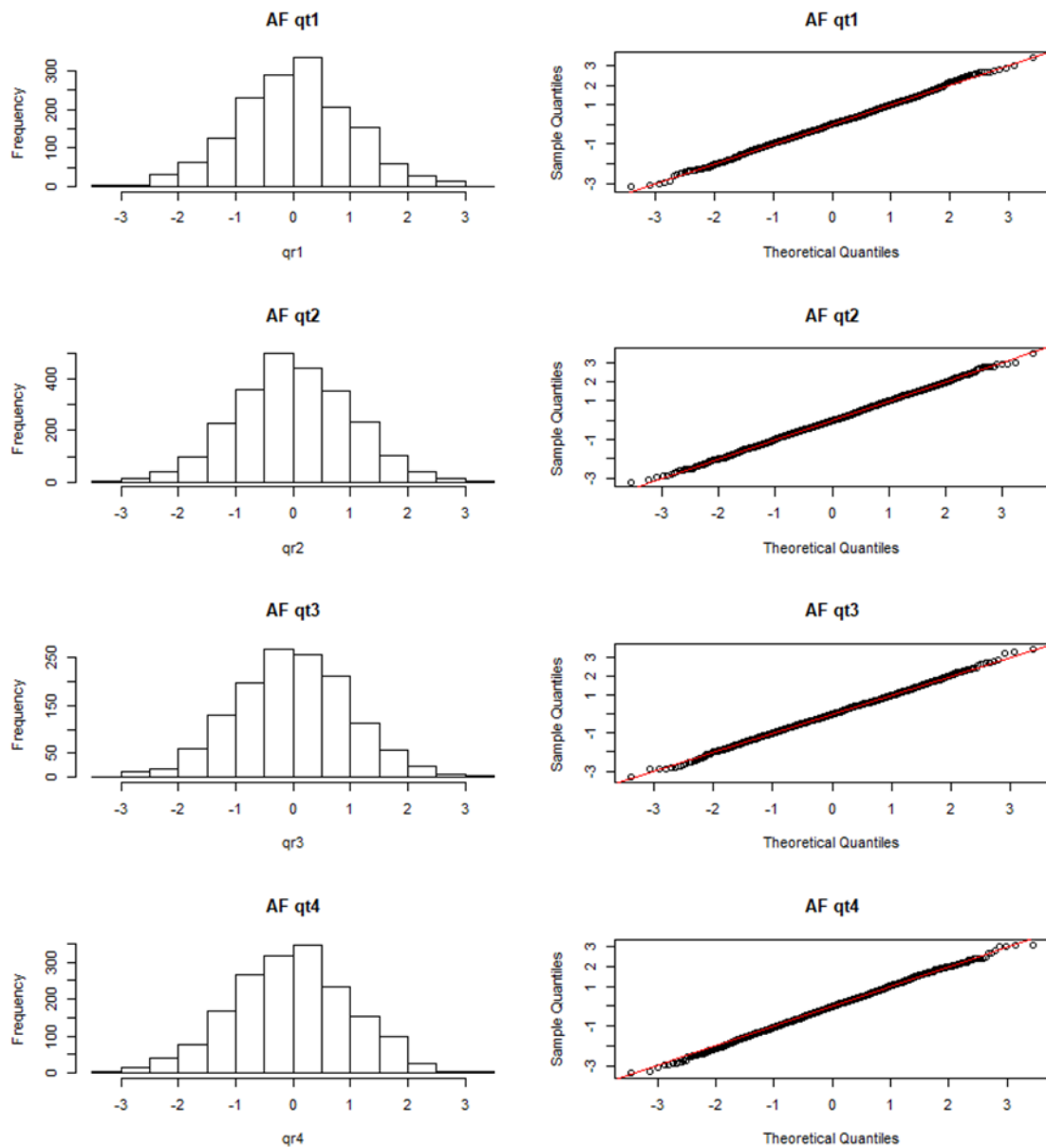


Fig. S9. Diagnostic plots (histogram of residuals and Q-Q plot) for the generalized additive model on presence or absence of adult female (AF) blue sharks by season