



Supporting Information Part 1

A new species of baleen whale (*Balaenoptera*) from the Gulf of Mexico, with a review of its geographic distribution

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Supporting Information Table S1a. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 305 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.....	2
Supporting Information Table S1b. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 375 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.....	8
Supporting Information Table S1c. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 721 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.....	12
Supporting Information Table S2. Final multiplexes, PCR conditions, and heterozygosities for 17 polymorphic microsatellite loci used to genotype whale samples. T _a : annealing temperature; H _o : observed heterozygosity; H _e : expected heterozygosity.....	14
Supporting Information Table S3. Summary of stranding records of Bryde's-like whales in the Gulf of Mexico identified as duplicate records or mis-identified species.....	15
Supporting Information Table S4. Information available from Level A data for seven stranded Bryde's-like whales from the Gulf of Mexico and U.S. east coast. Field ID and USNM accession numbers provided where available. * = specimens confirmed by genetics to have the mitochondrial DNA control region haplotype diagnostic of Rice's whale. na = information not available.....	16
Supporting Information Figure S1. Bayesian reconstruction of phylogenetic relationships among members of the Bryde's whale complex based on 305 bp control region alignment....	17
Supporting Information Figure S2. Bayesian reconstruction of phylogenetic relationships among members of the Bryde's whale complex based on 721 bp control region alignment....	18

Supporting Information Table S1a. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 305 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.

*Sasaki et al., 2006 sequences considered to represent each species based on morphological data.

†Penry et al., 2018 sequence information was received via pers comm. with G. Penry. Sequences for Haplotypes 1 and 5 are in GenBank but follow accession numbers and haplotype names from Penry 2010. Haplotypes 7 and 8 have not been entered in GenBank. Haplotype 6 has partial sequence and was not used in this study.

305 bp Control Region Alignment					
Accession number [matching sequence(s)]	References	Sample location for each accession number: data collected from GenBank (GB), reference (ref), or Stranding Level A Data (Level A)	Summary of geographic areas for all samples	Number of individuals by accession/reference (n=1 in red if data not available)	Total # of individuals
<i>Balaenoptera ricei</i>					36
KJ586818	Rosel & Wilcox 2014 [this study]	Gulf of Mexico and northwest Atlantic Ocean (ref) [Gulf of Mexico]	Gulf of Mexico and western North Atlantic [Gulf of Mexico]	n=21 [n=13]	34
KJ586819	Rosel & Wilcox 2014	Gulf of Mexico (ref)	Gulf of Mexico	n=2	2
<i>Balaenoptera e. edeni</i>					67
AB201258* [AF146378; MH844104; MH844105]	Sasaki et al., 2006 [Yoshida & Kato 1999; Li et al., 2019; Li et al., 2019]	Japan: Kumamoto, Minamata (GB) [off Kochi & Wakayama City, Japan (ref); Lvs, China (ref); Beihai, China (ref)]	East China Sea [western North Pacific; East China Sea; South China Sea]	n=1 [n=2; n=1; n=1]	5
AB116099	Wada et al., 2003	Pulu Sugi near Singapore (ref-Junge 1950)	South China Sea	n=1	1
AF146379 [KC561138; KY963283]	Yoshida & Kato 1999 [Kershaw et al., 2013; Yusmalinda et al., 2017]	off Goto Islands, Japan (ref) [Oman and Bangladesh (ref); Selemadeg Tabanan Bali, Indonesia (ref)]	East China Sea [northern Indian Ocean; eastern Indian Ocean]	n=1 [n=45; n=1]	47
AF146380	Yoshida & Kato 1999	off Goto Islands, Japan (ref)	East China Sea	n=13	13
EF057443	Jayasankar et al., 2009	Mandapam, India (ref)	northern Indian Ocean	n=1	1
<i>Balaenoptera e. brydei</i>					629
AB201259* [EF068032]	Sasaki et al., 2006 [Kanda et al., 2007]	Japan: Miyagi, Natori (GB) [western North Pacific (ref)]	western North Pacific [western North Pacific]	n=1 [n=4]	5

AB116098 [AF146388; DQ340979; EF068048; EU030282; KF916566; KF916567; LC361213; Haplotype 8: not in GenBank†]	Wada et al., 2003 [Yoshida & Kato 1999; S. Hilderbrandt et al., unpubl.; Kanda et al., 2007 and Pastene et al., 2015; Alves et al., 2010; Luksenburg et al., 2015; Luksenburg et al., 2015; Murakami et al., 2018; Penry et al., 2018]	central South Pacific 28° 32'S 179° 41'W (ref-Omura et al., 1981) [eastern Indian Ocean 10°09'S 116°23'E (ref); Atlantic Ocean: Canary Islands (GB); western North Pacific, Fiji, Peru, Chile, Brazil (ref); Madeira Island (ref); Daimari, Aruba (ref); Boca Calcof, Aruba (ref); western North Pacific (ref); off Africa coast west of The Gambia (ref)]	central South Pacific [eastern Indian Ocean; eastern North Atlantic; western North Pacific, western South Pacific, eastern South Pacific, and eastern South Atlantic; eastern North Atlantic; Caribbean Sea; Caribbean Sea; western North Pacific; eastern North Atlantic]	n=1 [n=1; n=1 ; n=14; n=1; n=1; n=1; n=1; n=1]	22
AF146386	Yoshida & Kato 1999	collected in the western North Pacific (GB) 30°30' 137°14'E (ref)	western North Pacific	n=1	1
AP006469 [EF068017]	Sasaki et al., 2005 [Kanda et al., 2007]	Northwest Pacific Ocean (ref) [western North Pacific (ref)]	western North Pacific [western North Pacific]	n=1 [n=1]	2
DQ231170	Herath 2007	Columbo, Sri Lanka (ref)	northern Indian Ocean	n=1	1
EF068013	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=14	14
EF068014	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=4	4
EF068015	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=5	5
EF068016 [AF146385; MG877684]	Kanda et al., 2007 [Yoshida & Kato 1999; Kim et al., 2018]	western North Pacific and Peru (ref) [collected in the western North Pacific (GB) 23°12'N 168°53'E (ref); Wando, South Korea (ref)]	western North Pacific and eastern South Pacific [western North Pacific; East China Sea]	n=36 [n=2; n=1]	39
EF068018 [AF146382; LC361212]	Kanda et al., 2007 [Yoshida & Kato 1999; Murakami et al., 2018]	western North Pacific and Fiji (ref) [collected in the western North Pacific (GB) 28°54' 136°55'E (ref); western North Pacific (ref)]	western North Pacific and western South Pacific [western North Pacific; western North Pacific]	n=65 [n=1; n=1]	67
EF068019	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=2	2
EF068020 [AF146384]	Kanda et al., 2007 [Yoshida & Kato 1999]	western North Pacific (ref) [collected in the western North Pacific (GB) 24°30' 159°51'E (ref)]	western North Pacific [western North Pacific]	n=8 [n=1]	9
EF068021	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=3	3
EF068022 [AF146381; LC361211; LC361214]	Kanda et al., 2007 [Yoshida & Kato 1999; Murakami et al., 2018; Murakami et al., 2018]	western North Pacific, Fiji, and Peru (ref) [collected in the western North Pacific (GB) 29°14'N 136°40'E	western North Pacific, western South Pacific, and eastern South Pacific [western North Pacific;	n=160 [n=6; n=1; n=1]	168

		(ref); western North Pacific (ref); western North Pacific (ref)]	western North Pacific; western North Pacific]		
EF068023 [AF146383]	Kanda et al., 2007 [Yoshida & Kato 1999]	western North Pacific (ref) [collected in the western North Pacific (GB) 25°23′ 144°28′E (ref)]	western North Pacific [western North Pacific]	n=6 [n=1]	7
EF068024	Kanda et al., 2007	western North Pacific and Peru (ref)	western North Pacific and eastern South Pacific	n=15	15
EF068025	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=3	3
EF068026	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=5	5
EF068027	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=8	8
EF068028	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=6	6
EF068029	Kanda et al., 2007	western North Pacific and Peru (ref)	western North Pacific and eastern South Pacific	n=3	3
EF068030	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=14	14
EF068031	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=8	8
EF068033 [LC361210]	Kanda et al., 2007 [Murakami et al., 2018]	western North Pacific (ref) [western North Pacific (ref)]	western North Pacific [western North Pacific]	n=3 [n=1]	4
EF068034	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=5	5
EF068035	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=2	2
EF068036	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=2	2
EF068037	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=7	7
EF068038	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=7	7
EF068040	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=6	6
EF068041	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=8	8
EF068042	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=2	2
EF068043	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=1	1
EF068044	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=1	1
EF068045	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=3	3
EF068046	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=2	2
EF068047	Kanda et al., 2007	western North Pacific (ref)	western North Pacific	n=1	1
EF068049	Kanda et al., 2007	Fiji (ref)	western South Pacific	n=2	2

EF068050	Kanda et al., 2007	Fiji (ref)	western South Pacific	n=1	1
EF068051	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068052	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068053	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068054	Kanda et al., 2007 and Pastene et al., 2015	Peru and Chile (ref)	eastern South Pacific	n=8	8
EF068055	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068056 [KY938508]	Kanda et al., 2007 and Pastene et al., 2015 [Flannery & Sellas unpubl.]	Peru and Chile (ref) [San Pablo Bay, Sears Point, Sonoma, CA (Level A)]	eastern South Pacific [eastern North Pacific]	n=5 [n=1]	6
EF068057	Kanda et al., 2007 and Pastene et al., 2015	Peru and Chile (ref)	eastern South Pacific	n=6	6
EF068058	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068059	Kanda et al., 2007	Peru (ref)	eastern South Pacific	n=1	1
EF068060 [AF146387]	Kanda et al., 2007 [Yoshida & Kato 1999]	south of Java, eastern Indian Ocean (ref) [collected in the eastern Indian Ocean (GB) 10°05'S 116°25'E (ref)]	eastern Indian Ocean [eastern Indian Ocean]	n=19 [n=3]	22
EF068061 [Haplotype 1: same as GU085094†; Haplotype 4: same as GU085098†; X72196]	Kanda et al., 2007 and Kershaw et al., 2013 [Penry et al., 2018; Penry et al., 2018; Árnason et al., 1993]	south of Java and Oman and Maldives (ref) [S. Africa inshore and east of Madagascar Plateau, 28.4°S 48.2°E and Walvis Bay, Namibia (ref); S. Africa inshore (ref); Aasfontein, S. Africa (ref- Árnason & Best 1991)]	eastern Indian Ocean and northern Indian Ocean [eastern South Atlantic and western Indian Ocean; eastern South Atlantic and western Indian Ocean; eastern South Atlantic Ocean/western Indian Ocean border]	n=4 [n=86; n=1; n=1]	92
EF068062	Kanda et al., 2007	south of Java, eastern Indian Ocean (ref)	eastern Indian Ocean	n=1	1
EF068063	Kanda et al., 2007	south of Java, eastern Indian Ocean (ref)	eastern Indian Ocean	n=1	1
Haplotype 2: same as GU085096†	Penry et al., 2018	S. Africa, east coast inshore (ref)	western Indian Ocean	n=4	4
Haplotype 5: same as GU085097†	Penry et al., 2018	St. Helena Bay, S. Africa, offshore (ref)	eastern South Atlantic	n=1	1
Haplotype 3: same as GU085099†	Penry et al., 2018	S. Africa, inshore, west coast (ref)	eastern South Atlantic	n=1	1
Haplotype 7: not in GenBank†	Penry et al., 2018	Walvis Bay, Namibia (ref)	eastern South Atlantic	n=1	1

JX090150	Kershaw et al., 2013	Maldives and Bangladesh (ref)	northern Indian Ocean	n=5	5
JX090151	Kershaw et al., 2013	Maldives (ref)	northern Indian Ocean	n=1	1
JX090152	Kershaw et al., 2013	Maldives (ref)	northern Indian Ocean	n=2	2
KC261305	Kershaw et al., 2013	Oman (ref)	northern Indian Ocean	n=1	1
KF916568	Luksemburg et al., 2015	Barcadera, Aruba (ref)	Caribbean Sea	n=1	1
KT191131	Pastene et al., 2015	Chile (ref)	eastern South Pacific	n=1	1
KT191132	Pastene et al., 2015	Chile (ref)	eastern South Pacific	n=1	1
KT191133	Pastene et al., 2015	Chile (ref)	eastern South Pacific	n=1	1
KT191134	Pastene et al., 2015	Brazil (ref)	western South Atlantic	n=1	1
LC361215	Murakami et al., 2018	W North Pacific (ref)	western North Pacific	n=1	1
<i>Balaenoptera omurai</i>					41
AB201256* [AB116095; AB201257*; AF398372; KM233838; KT582064; KT757371; KX254408; KY963289; MG877682; MG877683]	Sasaki et al., 2006 [Wada et al., 2003; Sasaki et al., 2006; Yang et al., 2002; Jung et al., 2016; Cerchio et al., 2015; Ottewell et al., 2016; Cypriano-Souza et al., 2017; Yusmalinda et al., 2017; Kim et al., 2018; Kim et al., 2018]	Japan: Yamaguchi, Toyoura, Tsunoshima Island (GB) [Sea of Japan, Tsunoshima Island (ref); Japan: Kagawa, Takuma-cho, Awashima Island (GB); Ruian City, Zhejiang Province, China (ref); Mauritania, West Africa (ref); northwest Madagascar (ref); Exmouth, Australia (ref); Pecem Beach, Brazil (ref); Pulau Banyak, Aceh, Indonesia (ref); Geoje, South Korea (ref); Goheung, South Korea (ref)]	Sea of Japan [Sea of Japan; Sea of Japan; East China Sea; eastern North Atlantic; western Indian Ocean; eastern Indian Ocean; western South Atlantic; eastern Indian Ocean; East China Sea; East China Sea]	n=1 [AB116095 same animal as AB201256; n=1; n=1; n=23; n=1; n=1; n=1; n=1; n=1]	32
AB116096	Wada et al., 2003	Solomon Sea (ref)	western South Pacific	n=1	1
AB116097	Wada et al., 2003	eastern Indian Ocean (ref)	eastern Indian Ocean	n=1	1
AF146389	Yoshida & Kato 1999	off the Solomon Islands (ref)	western South Pacific	n=5	5
MH844102 [MH844103]	Li et al., 2019 [Li et al., 2019]	Ningbo, China (ref) [Ningbo, China (ref)]	East China Sea [East China Sea]	n=1 [n=1]	2
<i>Balaenoptera borealis</i>					90
X72195 [MH035691]	Árnason et al., 1993 [Huijser et al., 2018]	Icelandic waters (ref) [North Atlantic: Azores, Gulf of Maine, Iceland (ref)]	North Atlantic [eastern North Atlantic and western North Atlantic]	n=1 [n=43]	44
AP006470	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1

DQ145042	C. Baker unpubl.	New Zealand? (GB: specimen name contains NZ and C. Baker submitted from University of Auckland)	South Pacific?	n=1	1
KJ586813 [MF409248; MF409249; MH035692]	Rosel and Wilcox 2014 [Árnason et al., 2018; Árnason et al., 2018; Huijser et al., 2018]	North Carolina stranding (Level A) [unk; unk; North Atlantic: Azores, Gulf of Maine, Iceland (ref)]	western North Atlantic [unk; unk; eastern North Atlantic and western North Atlantic]	n=1 [n=1; n=1; n=16]	19
MH035689	Huijser et al., 2018	North Atlantic: Azores, Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=9	9
MH035690	Huijser et al., 2018	North Atlantic: Azores, Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=10	10
MH035693	Huijser et al., 2018	North Atlantic: Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=2	2
MH035694	Huijser et al., 2018	North Atlantic: Azores (ref)	eastern North Atlantic	n=1	1
MH035695	Huijser et al., 2018	North Atlantic: Iceland (ref)	eastern North Atlantic	n=3	3
Other Baleen Whales (species)					11
AP006468 (<i>B. acutorostrata</i>)	Sasaki et al., 2005	North Atlantic Ocean (ref)	North Atlantic Ocean	n=1	1
KJ586812 (<i>B. acutorostrata</i>)	Rosel and Wilcox 2014	New York stranding (Level A)	western North Atlantic	n=1	1
AP006466 (<i>B. bonaerensis</i>)	Sasaki et al., 2005	Antarctic sea ocean (ref)	Southern Ocean	n=1	1
X72204 (<i>B. musculus</i>)	Árnason et al., 1993	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586814 (<i>B. musculus</i>)	Rosel and Wilcox 2014	Northwest Atlantic biopsy	western North Atlantic	n=1	1
X61145 (<i>B. physalus</i>)	Árnason et al., 1991	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586815 (<i>B. physalus</i>)	Rosel and Wilcox 2014	New Jersey stranding (Level A)	western North Atlantic	n=1	1
AP006473 (<i>E. australis</i>)	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586817 (<i>E. glacialis</i>)	Rosel and Wilcox 2014	Maine stranding (Level A)	western North Atlantic	n=1	1
AP006467 (<i>M. novaeangliae</i>)	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586816 (<i>M. novaeangliae</i>)	Rosel and Wilcox 2014	Maryland stranding (Level A)	western North Atlantic	n=1	1

Note: Kanda et al. (2007) Haplotype 27 (accession number EF068039) was not included in the alignment due to a sequencing error reported by L. Pastene, Institute of Cetacean Research, Tokyo, Japan. February 2020.

Supporting Information Table S1b. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 375 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.

*Sasaki *et al.* 2006 sequences considered to represent each species based on morphological data.

375 bp Control Region Alignment					
Accession number [matching sequence(s)]	References	Sample location for each accession number: data collected from GenBank (GB), reference (ref), or Stranding Level A Data (Level A)	Summary of geographic areas for all samples	Number of individuals by accession/reference (n=1 in red if data not available)	Total number of individuals
<i>Balaenoptera ricei</i>					36
KJ586818	Rosel & Wilcox 2014 [this study]	Gulf of Mexico and northwest Atlantic Ocean (ref) [Gulf of Mexico]	Gulf of Mexico and western North Atlantic [Gulf of Mexico]	n=21 [n=13]	34
KJ586819	Rosel & Wilcox 2014	Gulf of Mexico (ref)	Gulf of Mexico	n=2	2
<i>Balaenoptera e. edeni</i>					22
AB201258* [AF146378; MH844104; MH844105]	Sasaki et al., 2006 [Yoshida & Kato 1999; Li et al., 2019; Li et al., 2019]	Japan: Kumamoto, Minamata (GB) [off Kochi and Wakayama City, Japan (ref); Lvsu, China (ref); Beihai, China (ref)]	East China Sea [western North Pacific; East China Sea; South China Sea]	n=1 [n=2; n=1; n=1]	5
AB116099	Wada et al., 2003	Pulu Sugi near Singapore (ref-Junge 1950)	South China Sea	n=1	1
AF146379 [KY963283]	Yoshida & Kato 1999 [Yusmalinda et al., 2017]	off Goto Islands, Japan (ref) [Selemadeg Tabanan Bali, Indonesia (ref)]	East China Sea [eastern Indian Ocean]	n=1 [n=1]	2
AF146380	Yoshida & Kato 1999	off Goto Islands, Japan (ref)	East China Sea	n=13	13
EF057443	Jayasankar et al., 2009	Mandapam, India (ref)	northern Indian Ocean	n=1	1
<i>Balaenoptera e. brydei</i>					27
AB201259*	Sasaki et al., 2006	Japan: Miyagi, Natori (GB)	western North Pacific	n=1	1
X72196	Árnason et al., 1993	Aasfontein, S. Africa (ref-Arnason & Best 1991)	eastern South Atlantic/western Indian Ocean border	n=1	1
AB116098	Wada et al., 2003	central South Pacific 28° 32'S 179° 41'W (ref-Omura <i>et al.</i> 1981)	central South Pacific	n=1	1

AP006469	Sasaki et al., 2005	Northwest Pacific Ocean (ref)	western North Pacific	n=1	1
DQ231170	Herath 2007	Columbo, Sri Lanka (ref)	northern Indian Ocean	n=1	1
DQ340979 [AF146388; KF916566; KF916567]	S. Hilderbrandt et al., unpubl. [Yoshido & Kato 1999; Luksenburg et al., 2015; Luksenburg et al., 2015]	Atlantic Ocean: Canary Islands (GB) [eastern Indian Ocean 10°09'S 116°23'E (ref); Daimari, Aruba (ref); Boca Calcof, Aruba (ref)]	eastern North Atlantic [eastern Indian Ocean; Caribbean Sea; Caribbean Sea]	n=1 [n=1; n=1; n=1]	4
AF146381	Yoshida & Kato 1999	collected in the western North Pacific (GB) 29°14'N 136°40'E (ref)	western North Pacific	n=6	6
AF146382	Yoshida & Kato 1999	collected in the western North Pacific (GB) 28°54' 136°55'E (ref)	western North Pacific	n=1	1
AF146383	Yoshida & Kato 1999	collected in the western North Pacific (GB) 25°23' 144°28'E (ref)	western North Pacific	n=1	1
AF146384	Yoshida & Kato 1999	collected in the western North Pacific (GB) 24°30' 159°51'E (ref)	western North Pacific	n=1	1
AF146385 [MG877684]	Yoshida & Kato 1999 [Kim et al., 2018]	collected in the western North Pacific (GB) 23°12'N 168°53'E (ref) [Wando, South Korea (ref)]	western North Pacific [East China Sea]	n=2 [n=1]	3
AF146386	Yoshida & Kato 1999	collected in the western North Pacific (GB) 30°30' 137°14'E (ref)	western North Pacific	n=1	1
AF146387	Yoshida & Kato 1999	collected in the eastern Indian Ocean (GB) 10°05'S 116°25'E (ref)	eastern Indian Ocean	n=3	3
KF916568	Luksenburg et al., 2015	Barcadera, Aruba (ref)	Caribbean Sea	n=1	1
KY938508	Flannery & Sellas unpubl.	San Pablo Bay, Sears Point, Sonoma, CA (Level A)	eastern North Pacific	n=1	1
<i>Balaenoptera omurai</i>					17
AB201256* [AB116095; AB201257*; AF398372; KM233838; KT757371; KY963289; MG877682; MG877683]	Sasaki et al., 2006 [Wada et al., 2003; Sasaki et al., 2006; Yang et al., 2002; Jung et al., 2016; Ottewell et al., 2016; Yusmalinda et al., 2017; Kim et al., 2018; Kim et al., 2018]	Japan: Yamaguchi, Toyoura, Tsunoshima Island (GB) [Sea of Japan, Tsunoshima Island (ref); Japan: Kagawa, Takuma-cho, Awashima Island (GB); Ruian City, Zhejiang Province, China (ref); Mauritania, West Africa (ref); Exmouth, Australia (ref); Pulau Banyak, Aceh, Indonesia	Sea of Japan [Sea of Japan; Sea of Japan; East China Sea; eastern North Atlantic; eastern Indian Ocean; eastern Indian Ocean; East China Sea; East China Sea]	n=1 [AB116095 same animal as AB201256; n=1; n=1; n=1; n=1; n=1; n=1]	8

		(ref); Geoje, South Korea (ref); Goheung, South Korea (ref)]			
AB116096	Wada et al., 2003	Solomon Sea (ref)	western South Pacific	n=1	1
AB116097	Wada et al., 2003	eastern Indian Ocean (ref)	eastern Indian Ocean	n=1	1
AF146389	Yoshida & Kato 1999	off the Solomon Islands (ref)	western South Pacific	n=5	5
MH844102 [MH844103]	Li et al., 2019 [Li et al., 2019]	Ningbo, China (ref) [Ningbo, China (ref)]	East China Sea [East China Sea]	n=1 [n=1]	2
<i>Balaenoptera borealis</i>					90
X72195	Árnason et al., 1993	Icelandic waters (ref)	North Atlantic	n=1	1
AP006470	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
DQ145042	C. Baker unpubl.	New Zealand? (GB: specimen name contains NZ and C. Baker submitted from University of Auckland)	South Pacific?	n=1	1
KJ586813 [MF409248; MF409249; MH035692]	Rosel and Wilcox 2014 [Árnason et al., 2018; Árnason et al., 2018; Huijser et al., 2018]	North Carolina stranding (Level A) [unk; unk; North Atlantic: Azores, Gulf of Maine, Iceland (ref)]	western North Atlantic [unk; unk; eastern North Atlantic and western North Atlantic]	n=1 [n=1; n=1; n=16]	19
MH035689	Huijser et al., 2018	North Atlantic: Azores, Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=9	9
MH035690	Huijser et al., 2018	North Atlantic: Azores, Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=10	10
MH035691	Huijser et al., 2018	North Atlantic: Azores, Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=43	43
MH035693	Huijser et al., 2018	North Atlantic: Gulf of Maine, Iceland (ref)	eastern North Atlantic and western North Atlantic	n=2	2
MH035694	Huijser et al., 2018	North Atlantic: Azores (ref)	eastern North Atlantic	n=1	1
MH035695	Huijser et al., 2018	North Atlantic: Iceland (ref)	eastern North Atlantic	n=3	3
Other Baleen Whales [species]					11
AP006468 [B. acutorostrata]	Sasaki et al., 2005	North Atlantic Ocean (ref)	North Atlantic Ocean	n=1	1
KJ586812 [B. acutorostrata]	Rosel and Wilcox 2014	New York stranding (Level A)	western North Atlantic	n=1	1
AP006466 [B. bonaerensis]	Sasaki et al., 2005	Antarctic sea ocean (ref)	Southern Ocean	n=1	1

X72204 [B. musculus]	Árnason et al., 1993	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586814 [B. musculus]	Rosel and Wilcox 2014	Northwest Atlantic biopsy	western North Atlantic	n=1	1
X61145 [B. physalus]	Árnason et al., 1991	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586815 [B. physalus]	Rosel and Wilcox 2014	New Jersey stranding (Level A)	western North Atlantic	n=1	1
AP006473 [E. australis]	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586817 [E. glacialis]	Rosel and Wilcox 2014	Maine stranding (Level A)	western North Atlantic	n=1	1
AP006467 [M. novaeangliae]	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586816 [M. novaeangliae]	Rosel and Wilcox 2014	Maryland stranding (Level A)	western North Atlantic	n=1	1

Supporting Information Table S1c. Table indicating the mtDNA control region sequences used in the phylogenetic analyses of the 721 bp control region alignment. Information is provided for matching sequences in brackets and separated by semi-colons following the order of accession numbers in the first column. If the number of individuals for a given haplotype was not specified in the publication, we used n=1 and identified those using red font.

*Sasaki *et al.* 2006 sequences considered to represent each species based on morphological data.

721 bp Control Region Alignment					
Accession number [matching sequence(s)]	References	Sample location for each accession number: data collected from GenBank (GB), reference (ref), or Stranding Level A Data (Level A)	Summary of geographic areas for all samples	Number of individuals by accession/reference (n=1 in red if data not available)	Total number of individuals
<i>Balaenoptera ricei</i>					35
KJ586818 [this study]	Rosel & Wilcox 2014 [this study]	Gulf of Mexico and northwest Atlantic Ocean (ref) [Gulf of Mexico]	Gulf of Mexico and western North Atlantic [Gulf of Mexico]	n=21 [n=12]	33
KJ586819	Rosel & Wilcox 2014	Gulf of Mexico (ref)	Gulf of Mexico	n=2	2
<i>Balaenoptera e. edeni</i>					4
AB201258* [MH844104; MH844105]	Sasaki et al., 2006 [Li et al., 2019; Li et al., 2019]	Japan: Kumamoto, Minamata (GB) [Lvsi, China (ref); Beihai, China (ref)]	East China Sea [East China Sea; South China Sea]	n=1 [n=1; n=1]	3
AB116099	Wada et al., 2003	Pulu Sugi near Singapore (ref-Junge 1950)	South China Sea	n=1	1
<i>Balaenoptera e. brydei</i>					7
AB201259*	Sasaki et al., 2006	Japan: Miyagi, Natori (GB)	western North Pacific	n=1	1
X72196	Árnason et al., 1993	Aasfontein, S. Africa (ref-Arnason & Best 1991)	eastern South Atlantic/western Indian Ocean border	n=1	1
AB116098	Wada et al., 2003	central South Pacific 28° 32'S 179° 41'W (ref-Omura <i>et al.</i> 1981)	central South Pacific	n=1	1
AP006469	Sasaki et al., 2005	Northwest Pacific Ocean (ref)	western North Pacific	n=1	1
KF916566	Luksenburg et al., 2015	Daimari, Aruba (ref)	Caribbean Sea	n=1	1
KF916567	Luksenburg et al., 2015	Boca Calcof, Aruba (ref)	Caribbean Sea	n=1	1
KF916568	Luksenburg et al., 2015	Barcadera, Aruba (ref)	Caribbean Sea	n=1	1
<i>Balaenoptera omurai</i>					8

AB201256* [AB116095; AB201257*; KM233838; KT757371]	Sasaki et al., 2006 [Wada et al., 2003; Sasaki et al., 2006; Jung et al., 2016; Ottewell et al., 2016]	Japan: Yamaguchi, Toyoura, Tsunoshima Island (GB) [Sea of Japan, Tsunoshima Island (ref); Japan: Kagawa, Takuma-cho, Awashima Island (GB); Mauritania, West Africa (ref); Exmouth, Australia (ref)]	Sea of Japan [Sea of Japan; Sea of Japan; eastern North Atlantic; eastern Indian Ocean]	n=1 [AB116095 same animal as AB201256; n=1; n=1; n=1]	4
AB116096	Wada et al., 2003	Solomon Sea (ref)	western South Pacific	n=1	1
AB116097	Wada et al., 2003	eastern Indian Ocean (ref)	eastern Indian Ocean	n=1	1
MH844102 [MH844103]	Li et al., 2019 [Li et al., 2019]	Ningbo, China (ref) [Ningbo, China (ref)]	East China Sea [East China Sea]	n=1 [n=1]	2
<i>Balaenoptera borealis</i>					5
X72195	Árnason et al., 1993	Icelandic waters (ref)	North Atlantic	n=1	1
AP006470	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586813 [MF409248; MF409249]	Rosel and Wilcox 2014 [Árnason et al., 2018; Árnason et al., 2018]	North Carolina stranding (Level A) [unk; unk]	western North Atlantic [unk, unk]	n=1 [n=1; n=1]	3
Other Baleen Whales (species)					11
AP006468 (<i>B. acutorostrata</i>)	Sasaki et al., 2005	North Atlantic Ocean (ref)	North Atlantic Ocean	n=1	1
KJ586812 (<i>B. acutorostrata</i>)	Rosel and Wilcox 2014	New York stranding (Level A)	western North Atlantic	n=1	1
AP006466 (<i>B. bonaerensis</i>)	Sasaki et al., 2005	Antarctic sea ocean (ref)	Southern Ocean	n=1	1
X72204 (<i>B. musculus</i>)	Árnason et al., 1993	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586814 (<i>B. musculus</i>)	Rosel and Wilcox 2014	Northwest Atlantic biopsy	western North Atlantic	n=1	1
X61145 (<i>B. physalus</i>)	Árnason et al., 1991	Icelandic waters (ref)	North Atlantic Ocean	n=1	1
KJ586815 (<i>B. physalus</i>)	Rosel and Wilcox 2014	New Jersey stranding (Level A)	western North Atlantic	n=1	1
AP006473 (<i>E. australis</i>)	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586817 (<i>E. glacialis</i>)	Rosel and Wilcox 2014	Maine stranding (Level A)	western North Atlantic	n=1	1
AP006467 (<i>M. novaeangliae</i>)	Sasaki et al., 2005	Antarctic ocean (ref)	Southern Ocean	n=1	1
KJ586816 (<i>M. novaeangliae</i>)	Rosel and Wilcox 2014	Maryland stranding (Level A)	western North Atlantic	n=1	1

Supporting Information Table S2. Final multiplexes, PCR conditions, and heterozygosities for 17 polymorphic microsatellite loci used to genotype whale samples. T_a : annealing temperature; H_o : observed heterozygosity; H_e : expected heterozygosity.

Locus	Reference	Repeat type	Multiplex set	T_a (°C)	Final primer concentraion (μM)	# alleles	H_o	H_e
GM199/200	Amos <i>et al.</i> 1993	Di	1	50	0.075	3	0.28571	0.31925
GM417/418	Amos <i>et al.</i> 1993	Di	1	50	0.30	2	0.25714	0.26874
AC137	Bérubé <i>et al.</i> 2005	Di	1	50	0.10	3	0.48571	0.47702
CA234	Bérubé <i>et al.</i> 2005	Di	1	50	0.10	2	0.08571	0.08323
GT307	Bérubé <i>et al.</i> 2000	Di	1	50	0.30	2	0.17143	0.15901
Ppho137	Rosel <i>et al.</i> 1999	Di	1	50	0.05	2	0.22857	0.24845
SW13	Richard <i>et al.</i> 1996	Di	1	50	0.05	2	0.22857	0.20538
GATA053	Palsbøll <i>et al.</i> 1997	Tetra	2	50	0.0375	3	0.05714	0.05673
GATA098	Palsbøll <i>et al.</i> 1997	Tetra	2	50	0.15	4	0.37143	0.34286
GATA417	Palsbøll <i>et al.</i> 1997	Tetra	2	50	0.05	2	0.05714	0.05631
GGAA520	Palsbøll <i>et al.</i> 1997	Tetra	2	50	0.30	4	0.60000	0.54369
GT122	Bérubé <i>et al.</i> 2005	Di	2	50	0.05	2	0.11429	0.10932
Ppho130	Rosel <i>et al.</i> 1999	Di	2	50	0.20	2	0.05714	0.05631
EV104	Valecchi & Amos 1996	Di	3	58	0.15	2	0.02857	0.02857
GATA028	Palsbøll <i>et al.</i> 1997	Tetra	3	58	0.15	3	0.51429	0.50849
GT023	Bérubé <i>et al.</i> 2000	Di	3	58	0.025	2	0.08571	0.08323
GT541	Bérubé <i>et al.</i> 2005	Di	3	58	0.30	3	0.60000	0.56936
Mean							0.24874	0.24211
s.d.							0.19789	0.18815

PCR reactions were completed in 10 μL volumes and contained 1x Type-it Multiplex PCR Master Mix and 10 ng of DNA.

PCR profiles : 95°C for 5 min; 27 cycles of 95°C for 30 sec, 50 or 58°C for 90 sec, and 72°C for 30 sec; final extension 60°C for 30 min.

Supporting Information Table S3. Summary of stranding records of Bryde's-like whales in the Gulf of Mexico identified as duplicate records or mis-identified species.

Type	Catalog Number	Additional Identifiers	Date	State	Location	Latitude	Longitude	Length (cm)	Sex	Stranding Condition	Comment
Duplicate	STR 2507		1/11/75	Louisiana	Venice, West Bay Near Tiger Pass, LA	29.12	-89.4	840	M	dead, fresh	Original database entry error that duplicated the stranding with a new catalog number and a date of February 11, 1975 rather than January 11, 1975. Now corrected in Smithsonian USNM Mammals Collections database. STR 1923 is the correct catalog number.
	STR 1923		2/11/75	Louisiana	Venice, LA	na	na	841	M	na	
Mis-Identification	MME3255	SE3744; C598	3/27/88	Texas	Matagorda peninsula, TX	28.57	-96.05	553	F	live stranding	Initially identified as a Bryde's whale and some literature refers to it as such. Photos and data from Tarpley, R. J. and Marwitz S. (1993) indicate minke whale. Now corrected in Smithsonian USNM Mammals Collections database
Mis-Identification and Duplicate	MME8185	SE6675; FLPP21292-2	2/12/92	Florida	Pensacola Pass, Spoil Island, 200 Yd E of Admiral's Island, FL	30.32	-87.32	1478	F	live stranding	On February 12, 1992 a large female whale stranded alive at Pensacola Pass, FL and was towed to Grand Pass, LA (30° 07.5', - 89° 14.5') by the US Coast Guard. It was identified as a Bryde's whale (MME8185; FLPP21292-2). However, examination of video collected during the event shows no evidence for rostral ridges on the whale. At 1478 cm, the whale is very large for a Rice's whale. On March 25, 1992 a 1480 cm sei whale stranded alive in Terrebonne Parish, LA (STR10270). The Stranding network notes from the February stranding in FL suggest this LA stranding may be the same whale. Given the lack of evidence for ridges and the nearly matching total length of the two records, this seems a valid conclusion and MME8185 / FLPP21292-2 was more than likely a sei whale.
	STR10270		3/25/92	Louisiana	Lake Pelto, Terrebonne Bay, LA	na	na	1480	na	live stranding	

Supporting Information Table S4. Information available from Level A data for seven stranded Bryde's-like whales from the Gulf of Mexico and U.S. east coast. Field ID and USNM accession numbers provided where available. * = specimens confirmed by genetics to have the mitochondrial DNA control region haplotype diagnostic of Rice's whale. na = information not available

	FMMSN1908* USNM 594665 ²	SC92-01*	WAM587* USNM 572922	FLGM110206-32* USNM 593537	MMPL0906* USNM 593536	BAP001 USNM 504074	MME1486
Total length (cm) ¹	1126	790	1105	470	1265	1001	1040
Sex	M	M	F	F	F	M	M
No. of ventral grooves/pleats	54	44	na	53 grooves	~50 pleats	~ 60 grooves	~52 grooves
Location of end of grooves/pleats	to and beyond umbilicus	to and beyond umbilicus	na	na	na	na	to umbilicus
Baleen count		288 (right)	na	230 (right)	290 (right)	255+ ³ (right)	na
Length longest plate	44.2	42	na	na	na		na
Dorsal fin height	37.8 ²	24	28	16	29	23.5	
Anterior flipper length	157.2	110	146	71	165	121	98
Posterior flipper length	110.2	68	109	47	na	108	130
Maximum flipper width	32.4	22	31	16	34	26	na
Width of flukes	286	52	282	117	316	221	320
Depth fluke notch	17	10	11	7	na	7.6	10
Cause of death	plastic ingestion	unknown	gear entanglement	unknown (calf)	ship strike	gear entanglement	unknown; just after a hurricane

¹ All measurements are in centimeters

² All measurements of holotype USNM 594665 taken after towing the carcass except for dorsal fin height which was measured after towing carcass

³ The stranding record states the upper right plate count was "255+" suggesting this is an incomplete count. It does not indicate why a full count is not provided.

Supporting Information Figure S1. Bayesian reconstruction of phylogenetic relationships among members of the Bryde's whale complex based on 305 bp control region alignment.

Posterior probabilities > 0.90 are shown at all major nodes. Haplotypes with a * indicate individuals morphologically identified to species by Sasaki et al. (2006) and used to identify the species clades. Length of scale bar is proportional to the number of nucleotide substitutions per site. GenBank accession numbers as well as geographic localities where the haplotype has been recorded are included in haplotype labels (Atlantic Ocean: WNA = western North Atlantic, ENA = eastern North Atlantic, WSA = western South Atlantic, ESA = eastern South Atlantic, GOMex = Gulf of Mexico, CAR = Caribbean Sea; Pacific Ocean: WNP = western North Pacific, ENP = eastern North Pacific, WSP = western South Pacific, ESP = eastern South Pacific, CSP = central South Pacific, ECS = East China Sea, SCS = South China Sea, SOJ = Sea of Japan; Indian Ocean: NIO = northern Indian Ocean, WIO = western Indian Ocean, EIO = eastern Indian Ocean; Southern Ocean: SO).



Supporting Information Figure S2. Bayesian reconstruction of phylogenetic relationships among members of the Bryde's whale complex based on 721 bp control region alignment.

Posterior probabilities > 0.90 are shown at all major nodes. Haplotypes with a * indicate individuals morphologically identified to species by Sasaki et al. (2006) and used to identify the species clades. Length of scale bar is proportional to the number of nucleotide substitutions per site. GenBank accession numbers as well as geographic localities where the haplotype has been recorded are included in haplotype labels (Atlantic Ocean: WNA = western North Atlantic, ENA = eastern North Atlantic, ESA = eastern South Atlantic, GOMex = Gulf of Mexico, CAR = Caribbean Sea; Pacific Ocean: WNP = western North Pacific, WSP = western South Pacific, CSP = central South Pacific, ECS = East China Sea, SCS = South China Sea, SOJ = Sea of Japan; Indian Ocean: WIO = western Indian Ocean, EIO = eastern Indian Ocean; Southern Ocean: SO).

