Table S1. The description of whitefish and considered cisco species samples. No – number of population or populations group in accordance with the numbering in Figures 1 and 2. Species codes are given according NCBI sequences' annotations: CAb–*Coregonus albula*; CF–*C. fontanae*; CS–*C. sardinella*; Cs–*Coregonus* sp., saurey; Cz–*Coregonus* sp., zeld; CL–*C. lavaretus*; COx–*C. oxyrhynchus*; CLn–*C. l. nelmuschka*, the dwarf form of whitefish; CLp–*C. l. pidschian*; CLpr–*C. l. pravdinellus*, CLb–*C. l. baunti*. Population codes correspond to the codes in the Figures S2 and S4. Introduced populations of vendace and whitefish are denoted by italic type and star (*). N–the number of analyzed sequences. NCBI accession numbers of sequences obtained in present study are marked by bold type.

No	Species code	Population code	Location (population)	Latitude	Longitude	Basin	N	NCBI accession numbers
Ciscoes samples description								
1	CAb	StG	Lake Stechlin, Germany	53.133333	13.016667	Baltic Sea	7	DQ399870, MN026520–MN026523
	CFn		Lake Stechlin, Germany	53.133333	13.016667	Baltic Sea	4	MN026526–MN026529
2	CAb	BP, PP, DP, MrtP, MdP, MorP, WP, OstP, ZrP, NrP	Lakes of Poland: Bytyń, Płociowe, Drawsko, Marta, Miedwie, Morzycko, Wigry, Ostrowieckie, Żerdno, Narie	53.232690	14.901005	Baltic Sea	15	DQ399869, KT426542–KT426553, KT426555, KT426556
3	CAb	Vst	Lake Vištytis, Kaliningrad Region	54.435750	22.719278	Baltic Sea	3	MN026524
4	CAb	Khd	Lake Khedo	64.004373	31.548406	White Sea	1	**OQ026245**
5	CAb	Ld	Lake Ladoga	61.276139	31.409417	Baltic Sea	2	MN026494
6	CAb	Slv	Lakes of the Solovetsky Archipelago	65.051110	35.685601	White Sea	9	KT254046, MN026491–MN026493
7	CAb	On	Lake Onega, Pin'guba bay	61.854389	34.569083	Baltic Sea	2	MN026497, MN026498
8	CAb	Bel	Lake Beloye	60.080889	37.742806	Caspian Sea	4	MK988547, MK988549, MK988550
9	CAb	Ple	Lake Pleshcheyevo	56.7945	38.774028	Caspian Sea	12	KT254050, KT254052, KT254054, KT254056, KX457962, MN026499–MN026503
10	CAb	Vd	Lake Vodlozero, near Kuganavolok village	62.237472	36.887333	Baltic Sea	2	KX457961, MN026525
11	CAb	Kn	Lake Kenozero	62.065556	38.183333	White Sea	3	MK988551–MK988553
12	CAb	Lk	Lake Lyokshmozero	61.736417	38.049111	White Sea	2	MN026495, MN026496
13	CAb	RbR	Rybinsk Reservoir, Volga River	58.335167	37.988411	Caspian Sea	22	KX457960, MN026504–MN026517
14	CAb	GrR	Gorky Reservoir, Volga River	57.165861	43.084972	Caspian Sea	1	MN026518

15	CAb	KbR	Kuybyshev Reservoir, Volga River	54.445694	48.472389	Caspian Sea	1	MN026519
16	CS	Klg	Kolguyev Island	68.831972	49.270194	Barents Sea	4	MN026487–MN026490
17	Cs	saurey	Pechora River, Lake Golodnaya Guba	67.867087	52.735316	Barents Sea	7	MT951286–MT951292
18	Cz	zeld	Pechora River, watercourse and estuary	66.890361	52.377837	Barents Sea	7	MT951280–MT951285
19	CS	Nvg	Nyakharvangata-Yakha River, Yamal	71.421025	71.849074	Kara Sea	6	**OQ02614–OQ026249**
20	CS	Sab	Sabetta-Yakha River, Yamal	71.302877	71.923919	Kara Sea	16	MN026536, **OQ026250–OQ026259**
21	CS	Ven	Venujmue-Yakha River, Yamal	71.126186	72.465179	Kara Sea	14	MN043662, **OQ026260–OQ026268**
22	CS	Yos	Lake Yoserotato, Yamal	71.063415	72.536575	Kara Sea	1	**OQ026269**
23	CS	Nt	Nyojta-Yakha River, Gydan Bay	71.6	75.066667	Kara Sea	3	MT948134–MT948136
24	CS	Ms	Messo-Yakha River, Taz Estuary	68.65	79.05	Kara Sea	5	MT948128–MT948133
25	CAb	*Ing*	Lake Ingol (Ob River basin)*	55.534306	88.823861	Kara Sea	1	MH243425
26	CS	Ps	Pyasina River, Ust'-Tareya	73.252739	90.599363	Kara Sea	7	MT943191–MT943195
27	CS	Yen	Yenisey River, near Dudinka town and Levinskie Peski village	69.405972	86.139528	Kara Sea	17	MN047152–MN047155, MT948113–MT948127
28	CS	Lam	Lake Lama, Putorana Plateau	69.75	91.666667	Kara Sea	8	MT943164–MT943171
29	CS	Sob	Lake Sobach'ye, Putorana Plateau	69.066667	90.933333	Kara Sea	12	KU760906, KU976907, KU760910, MN026530–MN026535, MT948137–MT948142
30	CS	Kut	Lake Kutaramakan, Putorana Plateau	67.4	91.716667	Kara Sea	10	MT943155–MT943157
31	CS	Kur	Kureyka Reservoir	66.961594	88.349755	Kara Sea	5	MT321281–MT321284
32	CS	YenK	Yenisey River, Kureyka River mouth	66.487692	87.2255647	Kara Sea	4	KX151808–KX151811
33	CS	Khat	Khatanga River	72.003035	102.518554	Laptev Sea	3	MT943188–MT943190
34	CS	Anb	Anabar River	70.77673	113.335087	Laptev Sea	1	MT943172
35	CS	Tk	Tiksi Bay, near Tiksi town	71.651167	128.893417	Laptev Sea	1	KT267306
36	CS	Ln	Lena River, Tit-Ary Island	63.495759	129.459908	Laptev Sea	6	MT94318–MT943187
37	CS	Yan	Yana River, Ust'-Yansk	70.914161	136.44154	Laptev Sea	5	MT943173–MT943177
38	CS	Ind	Indigirka River, Russkoye-Ust'ye duct	71.116667	149.3	East Siberian Sea	4	MT943158–MT943163
39	CS	Kol	Kolyma River, fishing area Ermolovo	68.478812	160.481272	East Siberian Sea	3	MT943178–MT943181
		Total					**240**	

No	Species code	Population code	Location (population)	Latitude	Longitude	Basin	N	NCBI accession numbers
Whitefish samples description								
	CL	AB	from an aquaculture pond of the Saku Fisheries Experimental Station, Japan	–	–	–	1	AB034824
1	CL	LmSc	Loch Lomond, Scotland, UK	56.115687	-4.627737	Irish Sea	1	MT982847
2	COx	VD	Vidaa River, Denmark	54.959233	8.673252	North Sea	21	JQ661398–JQ661418
3	CL	ND	Nissum fjord, Denmark	56.381162	8.161347	North Sea	18	JQ661463–JQ661467, JQ661469–JQ661481
	CL	RD	Ringkøbing fjord, Denmark	56.011861	8.194194	North Sea	20	JQ661443–JQ661462
	CL	KD	Kilen, the Limfjord, Denmark	56.499323	8.56815	North Sea	8	JQ661419–JQ661426
	CL	FD	Lake Flyder, the Limfjord, Denmark	56.51924	8.920154	North Sea	8	JQ661435–JQ991442
	CL	TD	Lake Tange, Denmark	56.338132	9.582553	Kattegat Sea	8	JQ661427–JQ661434
4	CL	AwG	Achterwasser, Germany	54.010814	13.964718	Baltic Sea	8	JQ661390–JQ661397
5	CL	HA	Lake Hallstatt, Austria	47.433333	13.65	Black Sea	4	KP123674–KP123677
	CL	KpA	Koppentraun, Austria	47.626577	13.8149	Black Sea	1	MT862810
6	CL	SrP, InP, MdP, MrzP, MrnP	Lakes of Poland: Sremski, Insko, Miedwie, Morzycko, Marianovo	53.364926	16.997909	Baltic Sea	6	DQ399863–DQ399868
7	CL	HvN	Havgajávri, Norway	68.840707	23.192254	Norwegian Sea	1	MT862827
8	CL	Tl	Tuloma River	68.8833	33.0	Baltic Sea	4	MN227179–MN227182
9	CL	Kr	Lake Zabornoye, Keret' River	66.256803	33.536691	White Sea	9	MG251333–MG251336
10	CL	Tp	Lake Topozero	65.868182	31.840475	White Sea	6	**OQ026270–OQ026272**
11	CL	Km	Lake Kamennoye	64.466667	30.183333	White Sea	4	KX010456–KX010459
12	CL	On	Lake Onega, Pin'guba bay	61.854389	34.569083	Baltic Sea	9	MG251338–MG251340
			Lake Onega	61.7	35.416667	Baltic Sea	10	MN227169–MN227178
13	CL	Ld	Lake Ladoga	61.15	31.333333	Baltic Sea	8	KP123667, KP123668, KX010454, KX010455, MG251337, MG251341
14	CL	GF	Gulf of Finland	60.276998	27.765566	Baltic Sea	26	KP123646–KP123666, KP123669–KP123673
15	CL	EstC	Estonia coast	59.336314	23.566620	Baltic Sea	8	JQ661382–JQ661389

16	CL	Pp	Lake Peipus	58.696341	27.437124	Baltic Sea	3	MG251330
17	CLn	Kbdw	Lake Kubenskoye	59.803077	39.115632	White Sea	2	MG251331, MG251332
18	CL	*Sv*	Lake Sevan, Armenia*	40.622651	44.979239	Caspian Sea	7	**OQ026273–OQ026278**
19	CLp	Sab	Sabetta-Yakha River, Yamal	71.302877	71.923919	Kara Sea	5	**OQ026279–OQ026281**
	CLp	Ven	Venujmue-Yakha River, Yamal	71.126186	72.465179	Kara Sea	36	**OQ026282–OQ026294**
20	CLp	Ln	Lake Langtibeito, Yamal	71.066667	70.316667	Kara Sea	4	KU948980–KU948983
21	CLp	SbR	Sob River, Ob River basin	66.416667	65.6	Kara Sea	2	KU948971, KU948972
22	CLp	Var	Lake Varchaty, Ob River basin	66.1	64.016667	Kara Sea	2	KU948978, KU948979
	CLp	Vk	Voykar River, Ob River basin	65.766893	64.0340578	Kara Sea	2	KU948976, KU948977
23	CLp	Sos	Northern Sosva River, Ob River basin	63.05	63.966667	Kara Sea	2	KU948973, KU948974
24	CLp	Tz	Taz River	67.485691	78.733474	Kara Sea	1	KU948975
25	CLp	Yen	Yenisey River, near Dudinka town	69.405972	86.139528	Kara Sea	7	MN043667, **OQ026295–OQ026299**
			Yenisey River, near Karaul village	70.067625	83.190011	Kara Sea	6	**OQ026300–OQ026304**
26	CLp	Lam	Lake Lama, Putorana Plateau	69.75	91.666667	Kara Sea	2	**OQ030169, OQ030170**
27	CLp	SbLm	Lake Sobach'ye, Putorana Plateau, mokchegor	69.066667	90.933333	Kara Sea	22	**OQ026305–OQ026314**
28	CLp	SbLpd	Lake Sobach'ye, Putorana Plateau, predator	69.066667	90.933333	Kara Sea	22	**OQ026315–OQ026322**
29	CLp	Kut	Lake Kutaramakan, Putorana Plateau	67.4	91.716667	Kara Sea	8	MK777971–MK777978
30	CLp	Irk	Irkingda River, Putorana Plateau	68.760034	92.252408	Kara Sea	1	**OQ030167**
	CLp	Keta	Lake Keta, Putorana Plateau	68.758971	91.504679	Kara Sea	1	**OQ030168**
	CLp	KhtL	Lake Khantayskoye, Putorana Plateau	68.4155097	91.4771176	Kara Sea	4	KU948967–KU948970
31	CLp	Kur	Kureyka River, Yenisey River basin	66.95	88.25	Kara Sea	4	KU948985–KU948988
32	CLp	Ntun	Nizhnyaya Tunguska River, Yenisey River basin	65.8	88.35	Kara Sea	1	KU948984
33	CLp	Akt	Ayakhta River, Yenisey River basin	59.309556	94.029667	Kara Sea	2	MN043666
34	CLp, CLpr	Tel	Lake Teletskoye, Ob River basin	52.533333	87.833333	Kara Sea	7	MT995303–MT995308, MK913369
35	CLp	Tod	Lake Todzha, Todzha depression, Yenisey River basin	52.640699	96.940819	Kara Sea	1	KT844956

	CLp	Khm	Khamsara River	52.833333	96.666667	Kara Sea	1	MT995309
36	CLp	ZhRs	Zakharova Rassokha River, Khatanga River basin	72.116667	101.133333	Laptev Sea	4	KU948963–KU948966
37	CLp	Pop	Popigay River	72.95	106.15	Laptev Sea	7	MT885377–MT885381, MT995268, MT995269
38	CLp	Anb	Anabar River	72.683333	113.416667	Laptev Sea	26	KU948937–KU948970
39	CLp	OlcL	Olenek channel of the Lena River	72.969087	122.064590	Laptev Sea	12	MT885382–MT885390, MT995266, MT995267
40	CLp	OlTm	Olenek River (settlement of Taymylyr)	72.616667	121.883333	Laptev Sea	16	MT885346–MT885361
41	CLp	Olmc	Olenek River (middle course)	67.9	105.266667	Laptev Sea	15	MT885362–MT885376
42	CLp	Tk	Tiksi Bay, near Tiksi town	71.644913	128.963140	Laptev Sea	1	MN043665
43	CLp	Mar	Markha River, Lena River basin	65.1	116.7	Laptev Sea	1	MT862525
44	CLp	Len	Upper Lena River	59.65	112.083333	Laptev Sea	2	MT862526, MT862535
			Lena River			Laptev Sea	2	KM013418, KM013424
46	CLp	BtR	Buotoma River, Lena River basin	61.433333	129.283333	Laptev Sea	7	MT862527–MT862533
46	CLp	BTkL	Lake Bolshoye Toko, Lena River basin	56.07	130.82	Laptev Sea	1	MT862534
47	CLp, CLb	Dor	Lake Dorong, Vitim River basin	55.259004	112.264035	Laptev Sea	23	MW741829–MW741836, **OQ030171–OQ030181**
48	CLp	Kap	Lake Kapylyushi (Oron), Lena River basin	54.816667	112.283333	Laptev Sea	11	KC339264–KC339274
49	CLb	Kapb	Lake Kapylyushi (Oron), Lena River basin	54.816667	112.283333	Laptev Sea	12	KC339252–KC339263
50	CLp	Om	Omoloy River	71.35	133.816667	Laptev Sea	4	MT862514–MT862516, MT862536
51	CLp	Yan	Yana River	71.316667	136.35	Laptev Sea	3	MT862505–MT862507
52	CLp	Khr	Khroma River	71.4	143.983333	East Siberian Sea	8	MT862508–MT862513, MT862487, MT862498
53	CLp	Sut	Suturuokha River, Indigirka River basin	68.9	146.283333	East Siberian Sea	13	MT862488–MT862492, MT862517–MT862524
54	CLp	Mom	Moma River, Indigirka River basin	66.733333	143.283333	East Siberian Sea	4	MT862485, MT862486, MT862497, MT862504
55	CLp	Kds	Kuydusun River, Indigirka River basin	63.324256	143.261813	East Siberian Sea	1	MT862479

	CLp	Ich	Lake Ichilyakh, Upper Indigirka River	62.1	143.3	East Siberian Sea	4	MT862483, MT862484, MT862493, MT862494
	CLp	Lab	Lake Labynkyr, Upper Indigirka River	62.498777	143.605418	East Siberian Sea	1	MT862478
56	CLp	Kol	Kolyma River	69.43333	156.316667	East Siberian Sea	9	MT862480, MT862481, MT862495, MT862499–MT862503, MT862510
57	CLp	Ilr	Lake Ilirney, Maly Anyuy River	67.371445	168.336587	East Siberian Sea	2	MT862482, MT862496
58	CLp	And	Anadyr River	65.133333	170.683333	Bering Sea	29	KX151813, KX151814, KX151816-KX151818, KX151821, KX151821, KX151822, MT995270–MT995287, MT995289–MT995291
		Total					**562**	