

**Supplementary Table S1.** EGSB bowhead whale stock samples included in the current study.

Sample ID	collected	sex	Latitude	Longitude	raw reads	Percent reads that mapped to reference	Coverage (ca. x)	SRA BioProjects: PRJNA643010 and PRJN798027 accessions
<b>17-05</b>	03.06.17	male	76.53N	3.54W	253,183,490	95.6	13.88	SRR15669496
<b>17-07</b>	04.06.17	female	76.41N	4.14W	365,705,208	95.9	20.22**	SRR15669495
<b>17-08</b>	04.06.17	male	76.41N	4.14W	439,217,342	94.9	23.74**	SRR15669492
<b>17-10</b>	04.06.17	female	76.34N	3.28W	300,910,478	95.8	16.54**	SRR15669491
<b>17-12</b>	04.06.17	female	76.35N	3.36W	425,564,908	95.7	23.22**	SRR15669490
<b>17-17</b>	05.06.17	male	76.34N	3.20W	403,224,222	95.2	21.94**	SRR15669489
<b>17-18</b>	05.06.17	male	76.29N	2.33W	406,088,430	95.7	20.88**	SRR15669488
<b>17-19</b>	08.06.17	male	76.50N	4.30W	499,791,902	95.2	20.68**	SRR15669487
<b>17-20</b>	08.06.17	female	76.50N	4.30W	264,272,696	95.5	14.02	SRR15669486
<b>17-21</b>	08.06.17	male	76.50N	4.31W	445,609,500	95.8	23.98**	SRR15669485
<b>18-05</b>	31.08.18	male	79.17N	18.25W	283,687,998	95.9	15.06	SRR15669494
<b>18-06</b>	31.08.18	male	79.17N	18.25W	302,575,026	95.8	16.06	SRR15669493
<b>A*</b>	18.04.06	female	80.58N	2.09E	25,326,811		2.34	SRR17645797
<b>B*</b>	18.04.06	female	80.58N	2.09E	22,803,823		2.27	SRR17645796
<b>C*</b>	18.04.06	female	80.58N	2.09E	24,404,362		2.45	SRR17645795
<b>D*</b>	18.04.06	female	80.58N	2.09E	24,528,479		1.72	SRR17645794
<b>E*</b>	18.04.06	female	80.58N	2.09E	10,698,925		1.09	SRR17645793
<b>F*</b>	18.04.06	female	80.58N	2.09E	26,861,564		0.8	SRR17645792
<b>I*</b>	03.04.10	female	79.54N	1.03E	23,232,087		2.05	SRR17645791

\* sequence data from Nyhus *et al.*<sup>19</sup> (for relatedness analysis only); \*\* samples used for calculation of autosome-wide heterozygosity