

Online Resource 1 Data from literature on the distribution of (sub)fossil and recent *Mytilus* spp. samples in the Atlantic Arctic region. Numbers correspond to locations in Fig. 1.

Location	Latitude	Longitude	Species	Status	Habitat	Comment	Reference
Baffin Island							
1 Pond inlet	73°N		<i>Mytilus</i> sp.	fossil		6000 – 3200 yBP	Andrews 1972; Klassen 1993
2 Pond inlet	73°N		<i>M. edulis</i>	living	subtidal	introduced by whaling ships	Ellis and Wilce 1961; Syvitski et al. 1989
3 eastern coast			<i>M. edulis</i>	living / fossil	subtidal		Andrews et al. 1981
4 south eastern coast	66°N		<i>M. edulis</i>	living	low intertidal		Ellis and Wilce 1961
Newfoundland							
5 north, north-west	60°N		<i>M. edulis</i>	living	intertidal		Lubinsky 1958; Andrews 1972; Dyke et al. 1996
6 east coast	49°N		<i>M. edulis</i>	living	subtidal	farmed	Dyke et al. 1996; Gallardi et al. 2014
7 Trinity Bay	48°N	54°W	<i>M. trossolus</i>	living	subtidal		Comesaña et al. 1999
Greenland west							
8 Robertson Fjord	77°45'N	70°W	<i>M. edulis</i>	living	low intertidal		Vibe 1950; Theisen 1973; Petersen 1978
9 Bowdoin Fjord	77°30'N	68°W	<i>M. edulis</i>	living	low intertidal		Thyrring et al. 2015
10 North Star Bay	76°30'N	67°W	<i>Mytilus</i> sp./ <i>M. edulis</i>	living / fossil			Davies et al. 1963; Blake Jr 1975; Funder and Fredskild 1989; Funder 1990; Kelly et al. 1999
11 Maarmorilik	71°N	52°W	<i>M. edulis</i> , <i>M. trossolus</i> and hybrids	living	intertidal	hybrids identified using SNPs	Wenne et al. 2015
12 Disco Bay	69°N	52°W	<i>M. edulis</i>	living	intertidal		Theisen 1973
Greenland east							
11 widely distributed	70–74°N		<i>M. edulis</i>	fossil		9500 – 5400 yBP	Ockelmann 1958; HJORT and FUNDER 1974; Bennike and Wagner 2013
12 Angmagssalik district	66°30'N		<i>M. edulis</i>	living	n.d.		VOGT 1933
Svalbard							
13 widely distributed	77°40'–80°10'N		<i>M. edulis</i>	fossil		11000 – 5000 yBP	Salvigsen and Osterholm 1983; Hjort et al. 1995; Salvigsen 2002; Hansen et al. 2011
14 Isfjorden, Kapp Thorsen	78°30'		<i>M. edulis</i>	fossil		1000 y BP	Salvigsen et al. 1992
15 Raudfjorden	79°48'N	12°09'E	<i>M. edulis</i>	living	at the beach	attached to <i>Ascophyllum nodosum</i>	Heintz 1926
16 Isfjorden, Sagaskjeret	78°12'N	13°5'E	<i>M. edulis</i>	living	subtidal		Berge et al. 2005
Franz Joseph Land							
17 n.d.			<i>Mytilus</i> sp.	fossil	n.d.		Nansen 1902; Hjort et al. 1995
Bjørnøya							
18 Evensenbukta	74°30'N	18°58'E	<i>M. edulis</i>	living	intertidal		Weslawski et al. 1997

<i>Southern Barents Sea</i>							
19	Cheshskaya Bay		<i>Mytilus</i> sp.	living	subtidal		Sukhotin et al. 2008
<i>Eastern Barents Sea</i>							
20	Nowaja Zemlya	75°N	<i>M. edulis</i>	fossil			Mangerud et al. 2008
21	Nowaja Zemlya	73°30'N	<i>M. edulis</i>	shell		dated to present day age	Mangerud et al. 2008
22	Nowaja Zemlya	72°N 56°E	<i>M. edulis</i>	living	n.d.	1921 – 1930	Galkin 1998
<i>White Sea</i>							
23	widely distributed		<i>M. edulis</i>	living	sub- / intertidal		Sukhotin et al. 2008
<i>Pechora Sea</i>							
24	Kolguev Island	69°N 50°E	<i>M. edulis</i>	living	intertidal		Sukhotin et al. 2008
25	Dolgij Island	69°17'N 58°51'E	<i>M. edulis</i>	living	sub- / intertidal		Sukhotin et al. 2008
26	Vaygach Island & Khaypudyr Bay	70°N 60°E	<i>M. edulis</i>	living	subtidal		Hummel et al. 2001
27	Yugorskij Shar Straits	69°7'N 60°30'E	<i>M. edulis</i>	living	subtidal		Denisenko et al. 2003