

Supplementary material 1

Table S1. List of additional *COI* sequences of *Bombus pyrrhopygus*, *B. hyperboreus* ssp. *hyperboreus*, and *B. hyperboreus* ssp. *natvigi* obtained from GenBank and BOLD database for the network analysis

Species	Haplotype code	GenBank/BOLD acc. no.	Locality
<i>Bombus pyrrhopygus</i>	PY1	AF279481	Russia: Kamchatka
<i>Bombus pyrrhopygus</i>	PY2	KF434342	Norway
<i>Bombus pyrrhopygus</i>	PY1	NOAPI563-14	Norway
<i>Bombus pyrrhopygus</i>	PY3	NOAPI641-14	Norway
<i>Bombus pyrrhopygus</i>	PY4	WASPS403-14	Russia: Siberia, Krasnoyarsky Kray
<i>Bombus pyrrhopygus</i>	PY5	WASPS446-14	Norway
<i>Bombus pyrrhopygus</i>	PY6	WASPS456-14	Norway
<i>Bombus pyrrhopygus</i>	PY7	WASPS466-14	Norway
<i>Bombus pyrrhopygus</i>	PY8	WASPS467-14	Norway
<i>Bombus pyrrhopygus</i>	PY9	WASPS471-14	Norway
<i>Bombus hyperboreus hyperboreus</i>	HY3	NOAPI569-14	Norway
<i>Bombus hyperboreus hyperboreus</i>	HY4	AY181107	Norway
<i>Bombus hyperboreus hyperboreus</i>	HY2	WASPS422-14	Russia: Arctic Yakutia
<i>Bombus hyperboreus natvigi</i>	NA1	AY181109	Greenland
<i>Bombus hyperboreus natvigi</i>	NA2	AY181108	Greenland
<i>Bombus hyperboreus natvigi</i>	NA3	KU374724	Greenland
<i>Bombus hyperboreus natvigi</i>	NA3	KU374368	Greenland
<i>Bombus hyperboreus natvigi</i>	NA3	KU373302	Greenland
<i>Bombus hyperboreus natvigi</i>	NA3	KU374134	Greenland
<i>Bombus hyperboreus natvigi</i>	NA3	WASPS704-16	USA: Alaska
<i>Bombus hyperboreus natvigi</i>	NA3	BEECF600-11	Canada: Nunavut
<i>Bombus hyperboreus natvigi</i>	NA4	BBWP646-12	USA
<i>Bombus hyperboreus natvigi</i>	NA5	BEECF714-11	Canada
<i>Bombus hyperboreus natvigi</i>	NA6	BEECF715-11	Canada
<i>Bombus hyperboreus natvigi</i>	NA3	BEECF716-11	Canada
<i>Bombus hyperboreus natvigi</i>	NA3	BEECF730-11	Canada

Table S2. List of additional *COI* haplotypes of the subgenus *Alpinobombus* members obtained from BOLD database for the phylogenetic analysis

Species	BOLD acc. no.	Locality
<i>Bombus alpinus</i>	BBBO067-10	Switzerland
<i>Bombus alpinus</i>	BOMNI066-13	Norway
<i>Bombus alpinus</i>	FBAPB990-09	Italy
<i>Bombus alpinus</i>	WASPS382-14	Sweden
<i>Bombus balteatus</i>	BBWP355-09	Mongolia
<i>Bombus balteatus</i>	GBAH0661-06	Norway
<i>Bombus balteatus</i>	WASPS398-14	Siberia
<i>Bombus balteatus</i>	WASPS399-14	Kamchatka
<i>Bombus balteatus</i>	WASPS423-14	Kamchatka
<i>Bombus hyperboreus hyperboreus</i>	GBAH0671-06	Norway
<i>Bombus hyperboreus hyperboreus</i>	NOAPI569-14	Norway
<i>Bombus hyperboreus natvigi</i>	GBAH0672-06	Greenland
<i>Bombus hyperboreus natvigi</i>	GBAH0673-06	Greenland
<i>Bombus hyperboreus natvigi</i>	BBWP646-12	USA
<i>Bombus hyperboreus natvigi</i>	BEECF714-11	Canada
<i>Bombus hyperboreus natvigi</i>	BEECF715-11	Canada
<i>Bombus hyperboreus natvigi</i>	WASPS1192-18	USA
<i>Bombus hyperboreus natvigi</i>	WASPS1193-18	USA
<i>Bombus kirbiellus</i>	BBWP630-12	USA
<i>Bombus kirbiellus</i>	BCIII086-11	Canada
<i>Bombus kirbiellus</i>	BEECD733-09	Canada
<i>Bombus kirbiellus</i>	BEECD850-10	USA
<i>Bombus kluanensis</i>	SSKUC1493-15	Canada
<i>Bombus kluanensis</i>	WASPS567-15	USA
<i>Bombus kluanensis</i> [Holotype]	BWTWO1194-10	Canada
<i>Bombus neoboreus</i>	BBWP633-12	USA
<i>Bombus neoboreus</i>	BEECF872-12	Canada
<i>Bombus polaris</i>	BBWP608-12	Greenland
<i>Bombus polaris</i>	BEECF598-11	Canada
<i>Bombus polaris</i>	BWTWO1272-10	Canada
<i>Bombus polaris</i>	CNWAH6365-15	Canada
<i>Bombus polaris</i>	GRAFW3101-14	Greenland
<i>Bombus polaris</i>	GRAFW3102-14	Greenland
<i>Bombus polaris</i>	MHBEE049-07	Canada
<i>Bombus polaris</i>	MHBEE056-07	Canada
<i>Bombus polaris</i>	MHBEE073-07	Canada
<i>Bombus polaris</i>	WASPS848-16	USA
<i>Bombus pyrrhopygus</i>	NOAPI641-14	Norway
<i>Bombus pyrrhopygus</i>	WASPS403-14	Siberia
<i>Bombus pyrrhopygus</i>	WASPS446-14	Norway
<i>Bombus pyrrhopygus</i>	WASPS466-14	Norway
<i>Bombus pyrrhopygus</i>	WASPS467-14	Norway
<i>Bombus pyrrhopygus</i>	WASPS471-14	Norway