**Text S1. The Northern Trade Route**

The Clause 5.1 of the Russian Federation federal law (Russian Federation, 2012) related to merchant shipping in the water of the Northern Sea Route defines the zone of navigation as follows:

 “The water area of the Northern Sea Route shall be considered as the water area adjacent to the Northern coast of the Russian Federation, comprising the internal sea waters, the territorial sea, the adjacent zone and the exclusive economic zone of the Russian Federation and confined in the East with the Line of Maritime Demarcation with the United States of America and Cape Dezhnev parallel in Bering Strait, with the meridian of Cape Mys Zhelania to the Novaya Zemlya Archipelago in the West, with the eastern coastline of the Novaya Zemlya Archipelago and the western borders of Matochkin Strait, Kara Strait and Yugorski Shar”.

However this area is too large to offer an operational definition of the Northern Trade Route (Figure S1). Instead, we applied a definition based on the routes followed by three ships that used the NSR in summer 2013 to link a European country to an Asiatic country (Table S1).