1 Supplementary information 3

2 Species- and population-specific movement networks by large marine ecoregion (y axis) and season (x 3 axis). Each population is scaled to the same size and all nodes (squares) and edges (lines) are scaled to 4 their usage accordingly. The entire species-specific movement network is plotted in grey scale in each 5 plot and each breeding population-specific network is displayed on top. Common guillemot movement networks are displayed in figure S3.1-8 and Brünnich's guillemot movement networks in figure S3.9-16. 6 7 Dark grey bars at the bottom of each figure denote the number of ecoregions used during each season 8 by the entire network while dark red bars show population-specific use (scale on the left). Bars at the 9 bottom of the figure between seasons denote the proportion of movement between (grey = entire 10 network, black = population-specific) and within (light grey =entire network, yellow = population-11 specific) ecoregions with scale on the right. 12 Breeding population names: SNZ = Southern Novaya Zemlya, NNZ = Northern Novaya Zemlya, ESP =

- 12 Dieeding population names. SNZ Southern Novaya Zennya, NNZ Northern Novaya Zennya, ESF –
- 13 Eastern Spitsbergen, WSP = Western Spitsbergen, BI = Bjørnøya, SBS = Southern Barents Sea, HJ =
- 14 Hjelmsøya, SK = Sklinna, JM = Jan Mayen, IC = North-East Iceland, FA = Faroe Islands, IM = Isle of May



Figure S3.1. Common guillemots, Isle of May



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18 Figure S3.2. Common guillemots, Faroe Islands



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20 Figure S3.3. Common guillemots, Sklinna



22 Figure S3.4. Common guillemots, North-East Iceland (Grimsey, Langanes)



24 Figure S3.5. Common guillemots, Jan Mayen



25

26 Figure S3.6. Common guillemots, Hjelmsøya



28 Figure S3.7. Common guillemots, Southern Barents Sea (Hornøya and Cape Gorodetskiy)



29

30 Figure S3.8. Common guillemots, Bjørnøya



32 Figure S3.9. Brünnich's guillemots, North-East Iceland (Grimsey, Langanes)



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34 Figure S3.10. Brünnich's guillemots, Jan Mayen



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36 Figure S3.11. Brünnich's guillemots, Western Spitsbergen (Diabas, Ossian Sarsfjellet and Amfifjellet)



38 Figure S3.12. Brünnich's guillemots, Eastern Spitsbergen (Alkefjellet)



39

40 Figure S3.13. Brünnich's guillemots, Bjørnøya



41

42 Figure S3.14. Brünnich's guillemots, Southern Barents Sea (Hornøya and Cape Gorodetskiy)



44 Figure S3.15. Brünnich's guillemots, Southern Novaya Zemlya (Cape Sakhanin)



46 Figure S3.16. Brünnich's guillemots, Northern Novaya Zemlya (Oranskie island)