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Potential for cumulative effects of human stressors on fish, sea birds and marine mammals in Arctic waters

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1 Short communication

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27 ABSTRACT

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29 We estimate the potential for cumulative impacts from multiple anthropogenic stressors on
30 fish, sea birds, and marine mammals in the western, southern and south-eastern parts of
31 marine waters around Greenland. The analysis is based on a comprehensive data set
32 representing five human activities including two proxies for climate change, as well as 25 key
33 animal species including commercially important fish and top predators such as sea birds
34 and marine mammals. Anthropogenic stressors are concentrated in two areas: the offshore
35 waters south of Greenland, and especially the western coast from the Qeqertarsuaq (Disko
36 Island) area to the southern tip of Greenland. The latter is also an area of high importance
37 for many key species, thus the potential for cumulative impacts is high along Greenland's
38 west coast. We conclude that this area should be under high scientific scrutiny and
39 conservation attention. Our study is a first attempt and a stepping-stone towards more
40 detailed and accurate estimates of the effects of multiple human stressors on Arctic marine
41 ecosystems.

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44 *Keywords:*

45 Human activities; multiple stressors; cumulative impacts; biodiversity; ecosystem-based
46 management; Arctic; Greenland.

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