

# STUDY OF RADIOACTIVITY IN ARCTIC MARINE SEAWEED FROM KONGSFJORDEN (SVALBARD)

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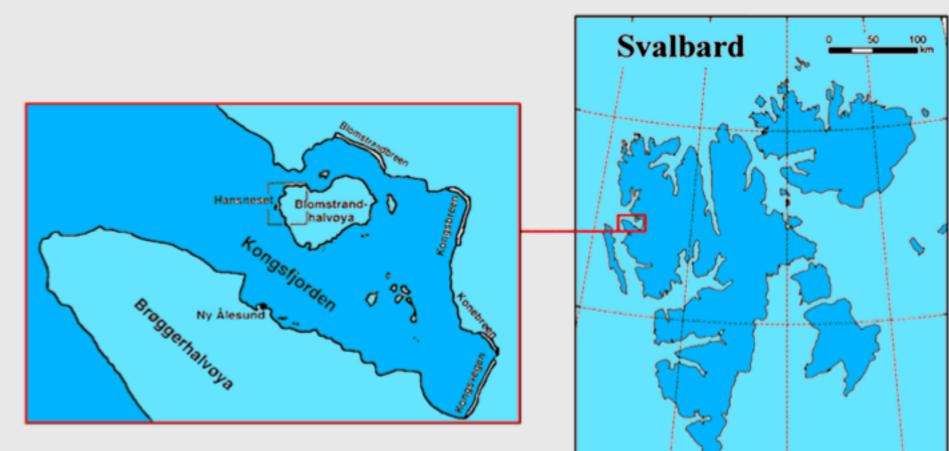
## INTRODUCTION

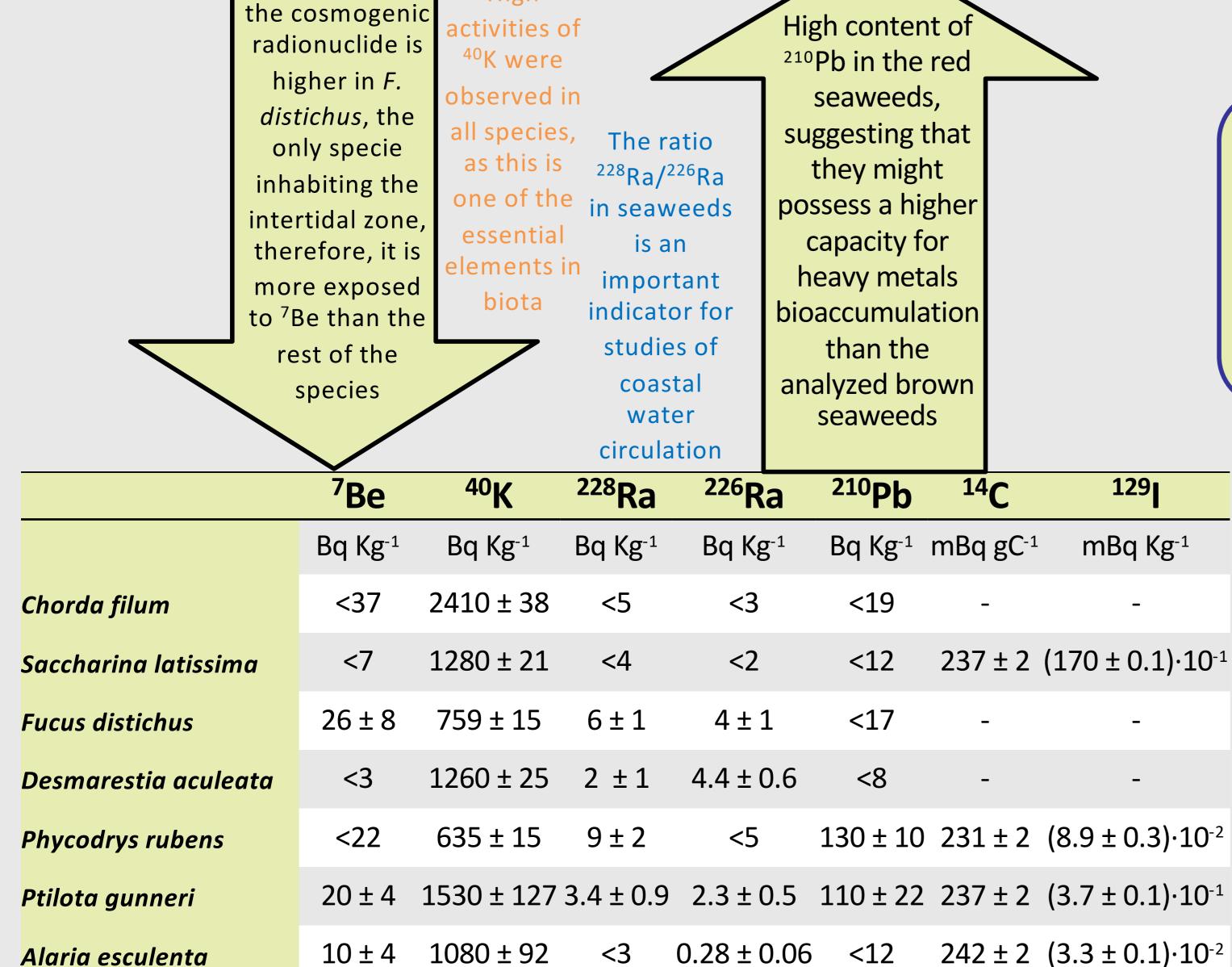
Levels of natural and anthropogenic radionuclides have been determined in six brown and red seaweed species from Arctic coasts (Kongsfjorden, Spitsbergen, Svalbard Islands) in order to characterize the radioactivity in this ecosystem.

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#### **MATERIALS AND METHODS**

- Samples were collected in September 2014, August 2017 and July 2019.
- Levels of <sup>7</sup>Be, <sup>40</sup>K, <sup>208</sup>Tl, <sup>210</sup>Pb, <sup>226</sup>Ra and <sup>228</sup>Ra were measured by high-resolution gamma spectrometry. While anthropogenic radionuclides (<sup>14</sup>C and <sup>129</sup>I) were determined by low-energy accelerator mass spectrometry (LEAMS).







- The activities of <sup>129</sup>I are two orders of magnitude higher than those found in algae collected on the Spanish Atlantic Coast and presents more variability than the <sup>14</sup>C results, indicating their different affinity to this element depending on the species.
- Radionuclide tracers discharged from Sellafield and La Hague are transported into the Arctic Ocean where they circulate at different depth levels, marking water of Atlantic origin (Karcher et al., 2012).



## ACKNOWLEDGMENT

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### REFERENCE

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