

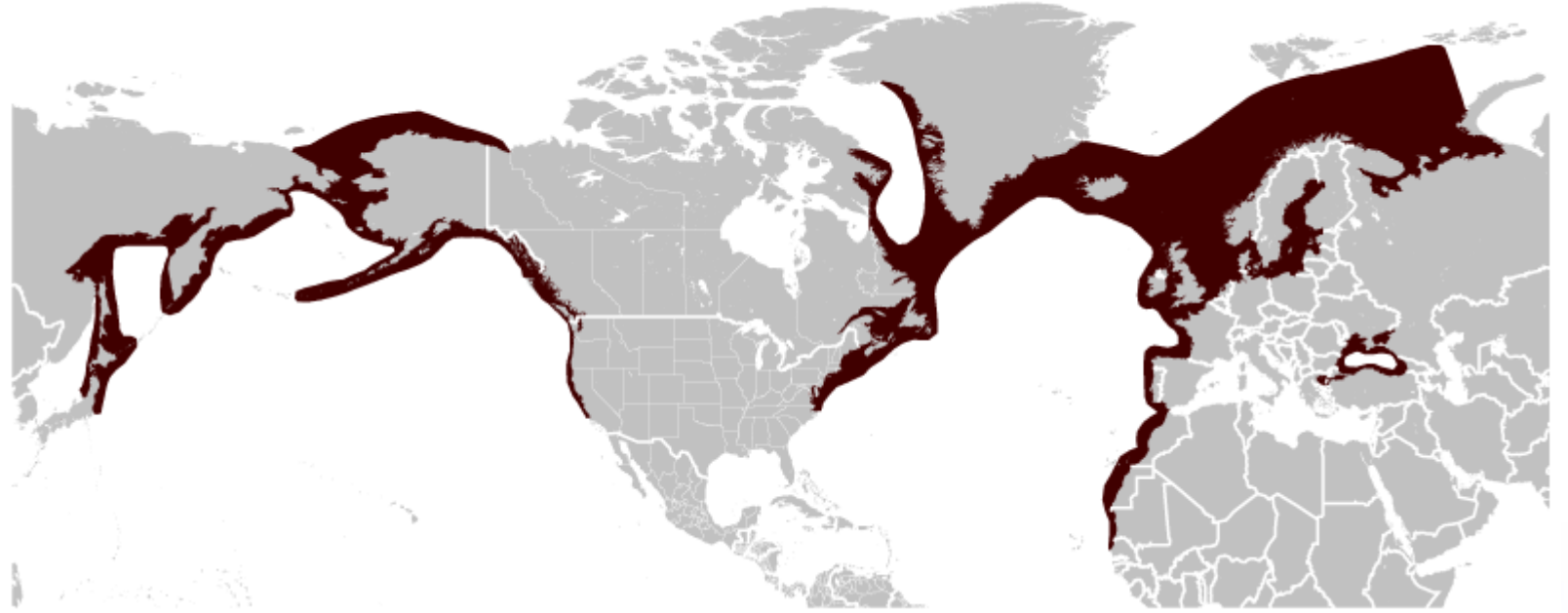
Capelin (*Mallotus villosus*) - Harbour porpoise (*Phocoena phocoena*) prey-predator relationship in Icelandic waters

Christophe Pampoulie, Filipa I. P. Samarra, Asunción Borrell, Anna Selbmann, Sverrir D. Halldórsson, Valérie Chosson, Haseeb S. Randhawa, Alexandre Paumier-Bianco, Alex Aguilar, Guðjón M. Sigurðsson

1. Distribution and characteristics



1.5-1.7m, 55-70kg
Max. 24 years old



Up to 20cm
Max. 3-4 years old



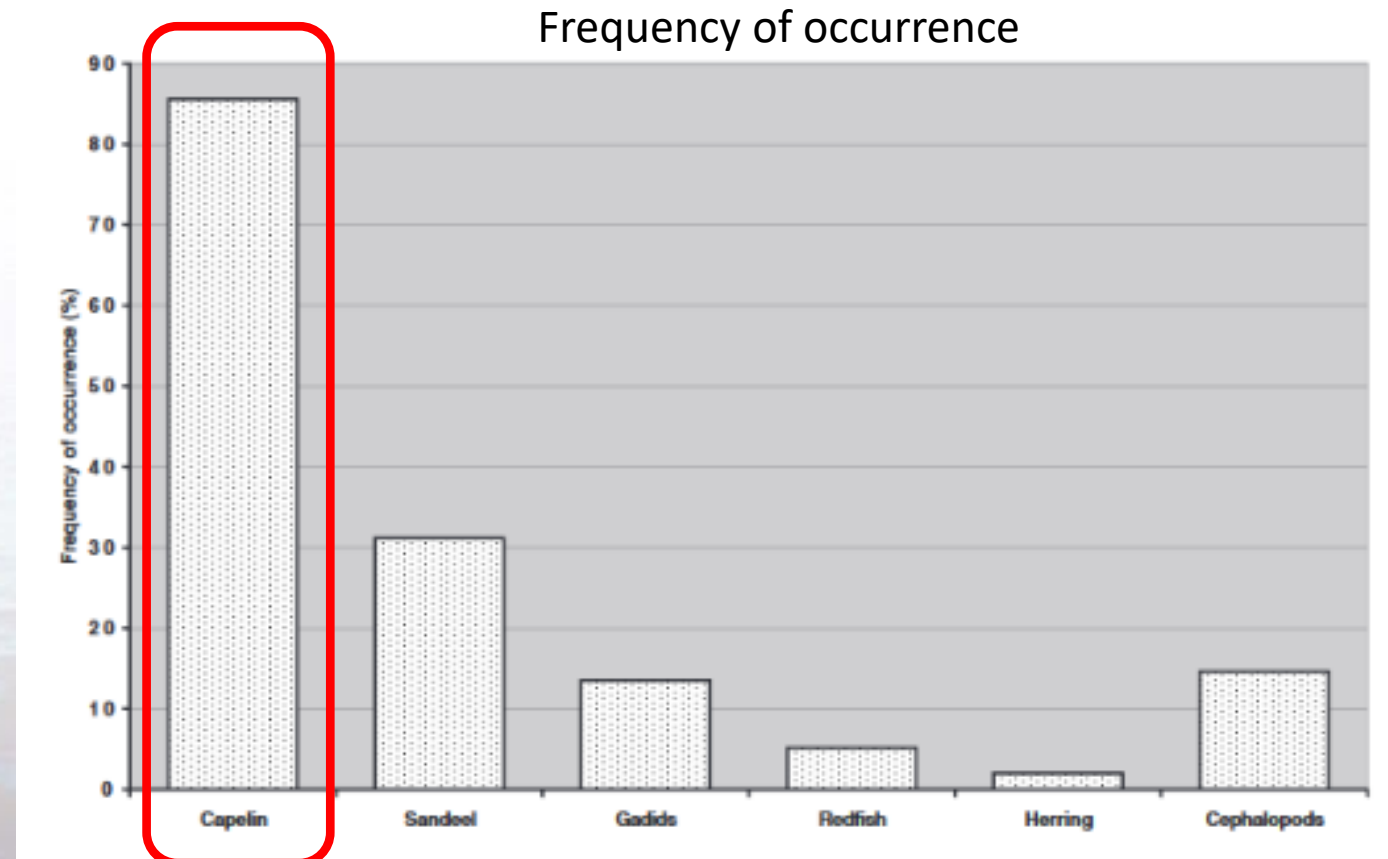
2. Old data - stomach content

Geographical, and seasonal variation in the diet of harbour porpoises (*Phocoena phocoena*) in Icelandic coastal waters

Gísli A. Víkingsson, Droplaug Ólafsdóttir and Jóhann Sigurjónsson

1,047 individuals
March-April
From 1991 to 1997

48,000t of fish consumed per year
(Sigurjónsson & Víkingsson, 1997)



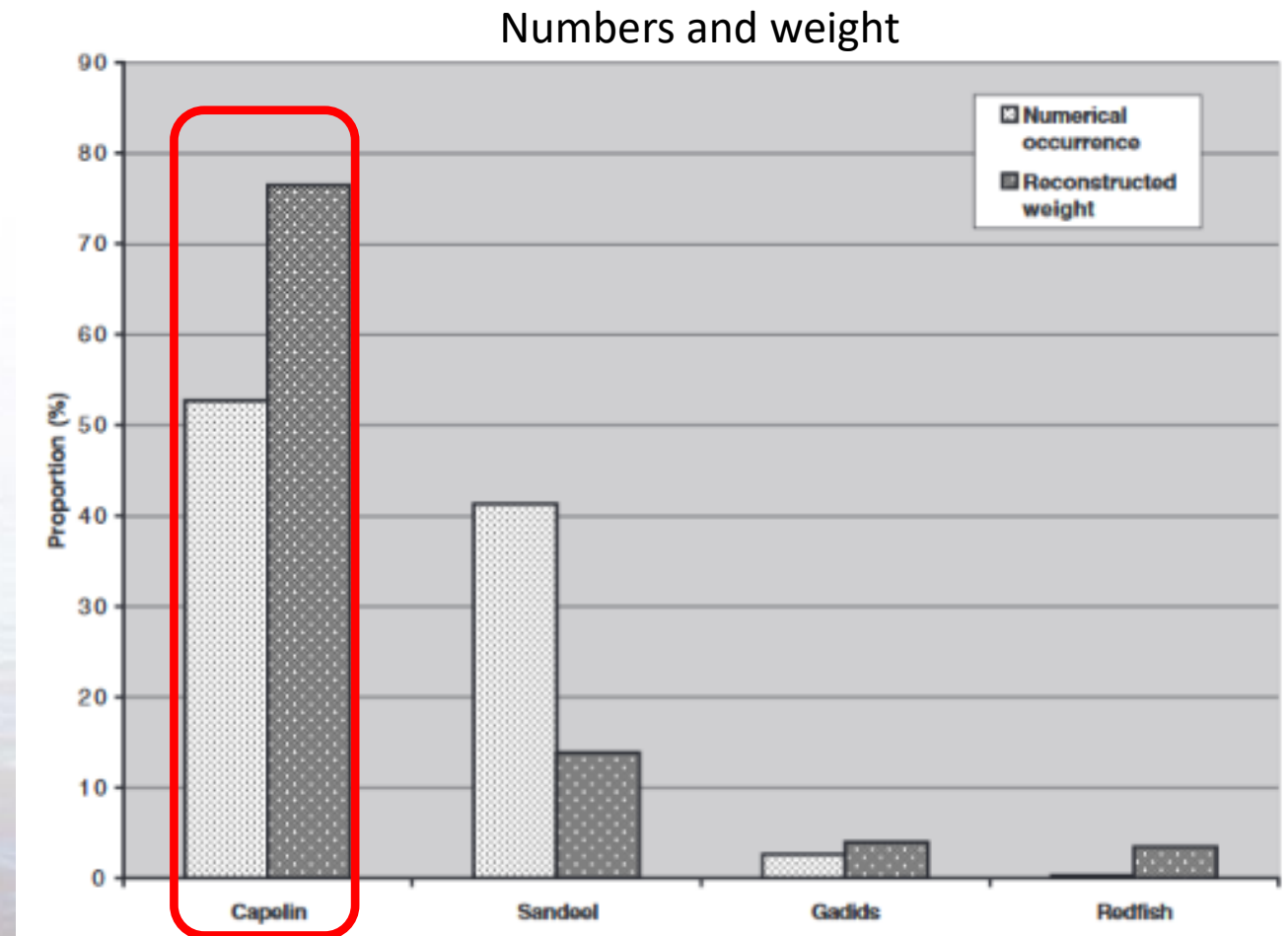
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1,047 individuals

March-April

From 1991 to 1997

30 years ago



48,000t of fish consumed per year
(Sigurjónsson & Víkingsson, 1997)

3. New data - Stable isotope ratios

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Insights into the trophic ecology of white-beaked dolphins *Lagenorhynchus albirostris* and harbour porpoises *Phocoena phocoena* in Iceland

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Christophe Pampoulie¹, Valérie Chosson¹, Thorvaldur Gunnlaugsson^{1,#},
Guðjón M. Sigurðsson¹, Alex Aguilar³, Gísli A. Víkingsson^{1,†}

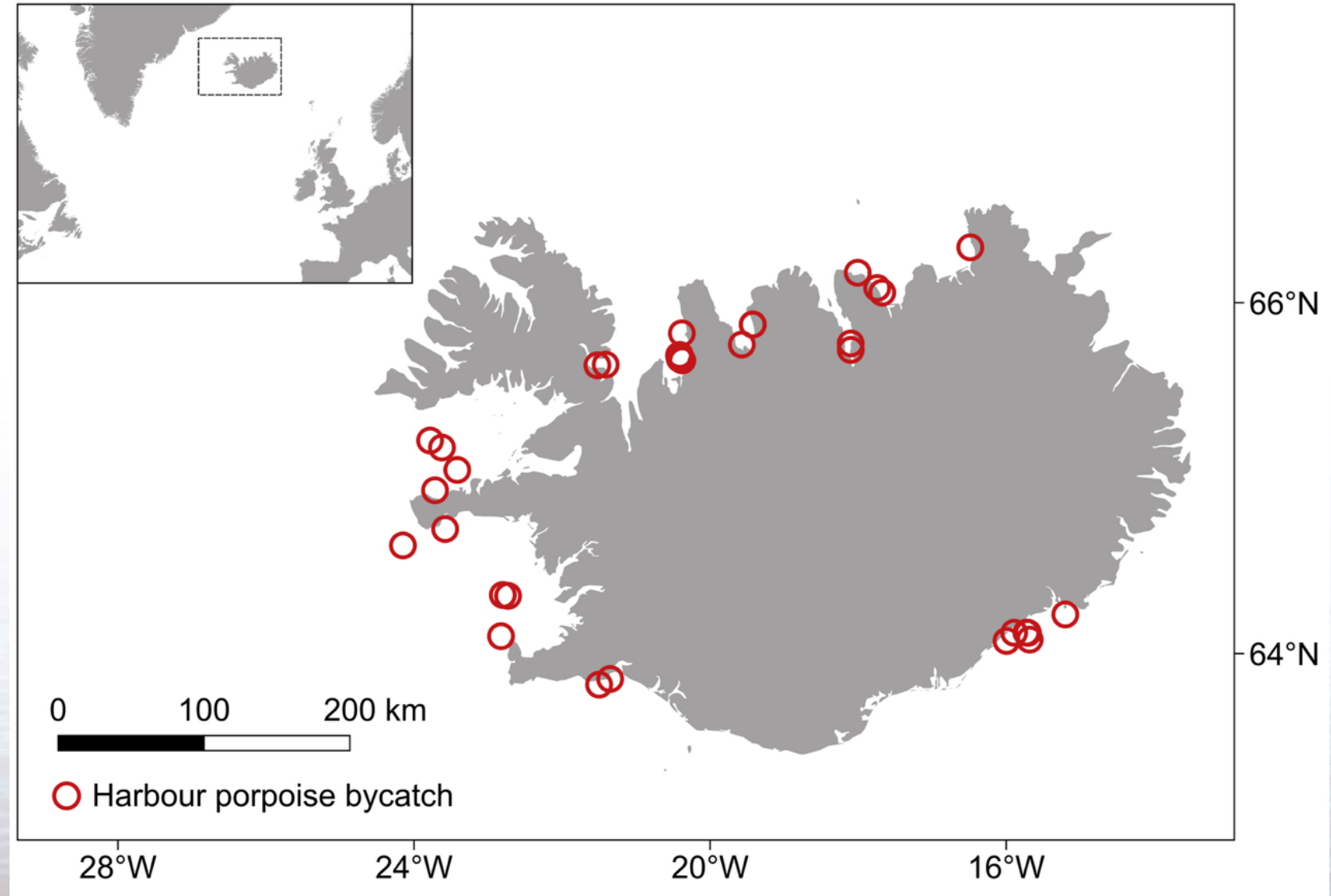
3. New data - Stable isotope ratios

March-April

1992 to 1998 (n=11)

2011 to 2019 (n=33)

n=29



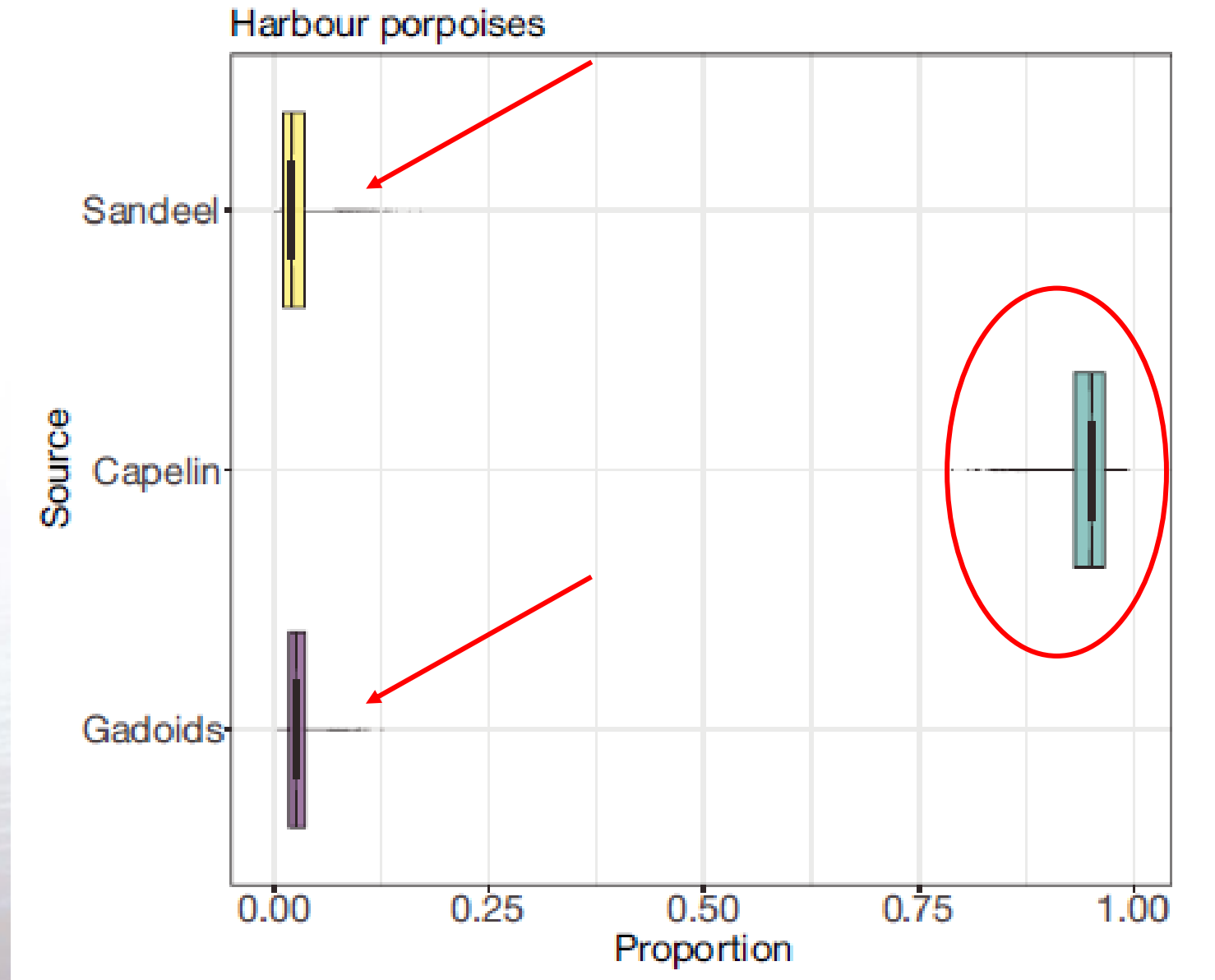
3. New data - Stable isotope ratios

Generalised Linear Model (GLM) testing for sex, year of sampling and length effect on isotopes values.

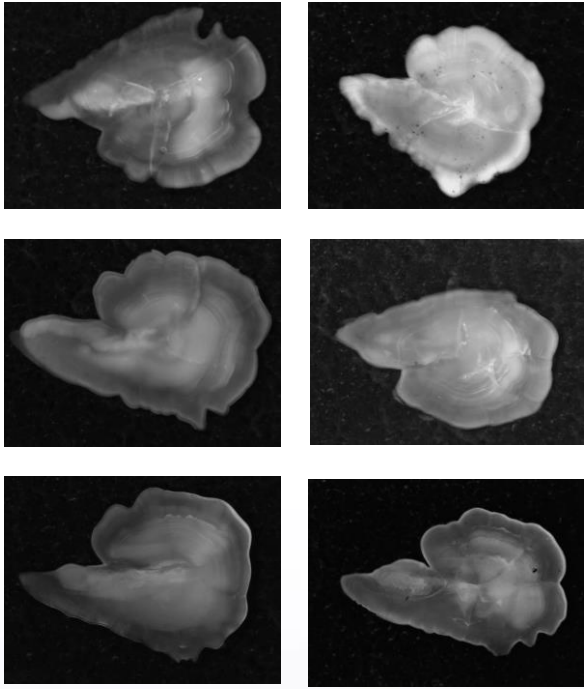
	$\delta^{15}\text{N}$				$\delta^{13}\text{C}$			
	Estimate	SE	<i>t</i>	p	Estimate	SE	<i>t</i>	p
(Intercept)	-55.12	34.33	-1.61	0.13	14.99	23.35	0.64	0.53
Sex (males vs. females)	0.07	0.33	0.23	0.82	-0.42	0.23	-1.86	0.08
Year	0.03	0.02	1.92	0.07	-0.02	0.01	-1.34	0.20
Length	-0.02	0.03	-0.63	0.54	-0.008	0.02	-0.41	0.69

3. New data - Stable isotope ratios

Bayesian mixing model estimates (mean, 25% and 75% percentiles) of diet composition for harbour porpoises *Phocoena phocoena*.



3. New data – New stomach content



Still doing analyses, but strong indication that capelin is still an essential prey for harbour porpoise

4. Conclusion

A 30 years period between the first stomach content analysis and our approaches.

A change in capelin distribution during winter (2003) and a decrease in abundance.

Yet the stable isotope study and the recent stomach content analysis confirm that capelin remains the main prey for harbour porpoise.

Future perspective:

Both stomach content and stable isotope ratio analyses will be performed on recent harbour porpoise samples.

A wide-angle photograph of a glacier lagoon. The foreground and middle ground are filled with numerous icebergs of various sizes, some appearing as small chunks and others as larger, more complex shapes. The water is a deep blue-grey color. In the background, a range of mountains is visible under a sky filled with dark, heavy clouds, with a bright patch of light breaking through near the top center. The overall mood is dramatic and serene.

Takk fyrir!