



tiphaine.mille@univ-lr.fr



Short-beaked common dolphins *Delphinus delphis* from European Atlantic waters segregate in space and time according to different ecological tracers

Tiphaine Mille¹, Paula Méndez-Fernandez¹, Florence Caurant^{1,2}, Willy Dabin¹, Marion Pillet¹, Jérôme Spitz^{1,2}, Amélia Viricel³, Catherine Munsch⁴, Yann Aminot⁴, Paul Tixier⁵, Jeremy J. Kiszka⁶, Philippe Marchand⁷, Anaïs Venisseau⁷, Maud Brault Favrou⁸, Carine Churlaud⁸, Gaël Guillou⁸, Filipe Alves^{9,10}, Rita Ferreira^{9,10}, Pablo Covelo¹¹, Xabier Pin¹¹, Alfredo López^{11,12}, Andreia Torres-Pereira¹², Catarina Eira¹², Morena Gaudino¹³, Brendan McHugh¹³, Sinéad Murphy¹⁴, Tiphaine Chouvelon^{1,4}

EC-37



SCAN ME



High rates of bycatch in fishery nets in the Bay of Biscay => affects one or several segments of the population ?

Population structure in the North-East Atlantic

❖ Genetic structure

- Information at the generational scale
- One large panmictic population

❖ Ecological structure : this study

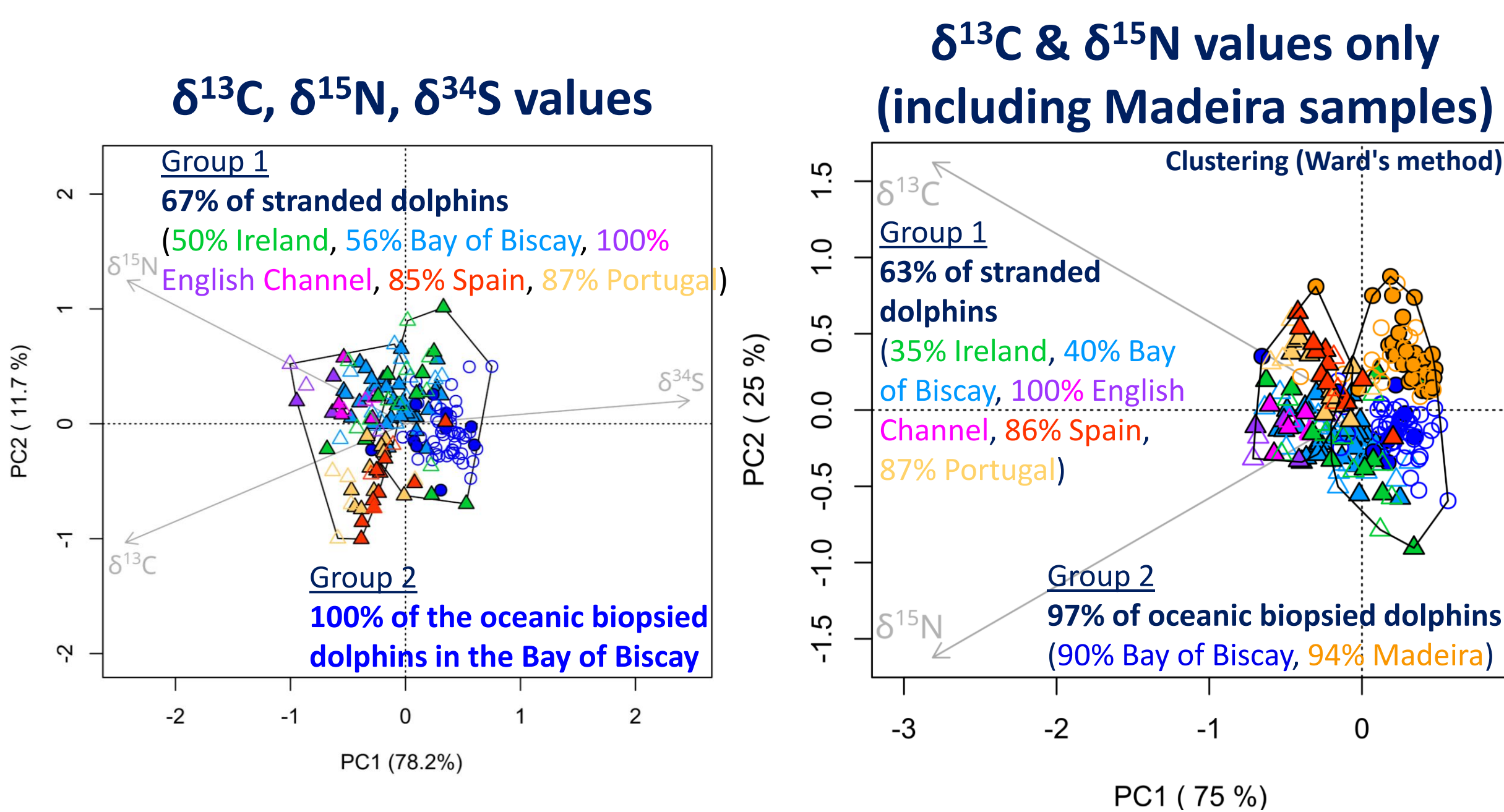
- Ecological tracers reflecting different foraging areas
- Information at ecological scale (from weeks to years)

Sampling between 2017 and 2023

- 119 stranded or bycaught individuals on the shelves collected by stranding networks of Ireland, France, and north of Spain and Portugal.
- 107 biopsies collected in offshore waters (60 in Bay of Biscay and 47 in Madeira).

SKIN => Short-term scale (few weeks)

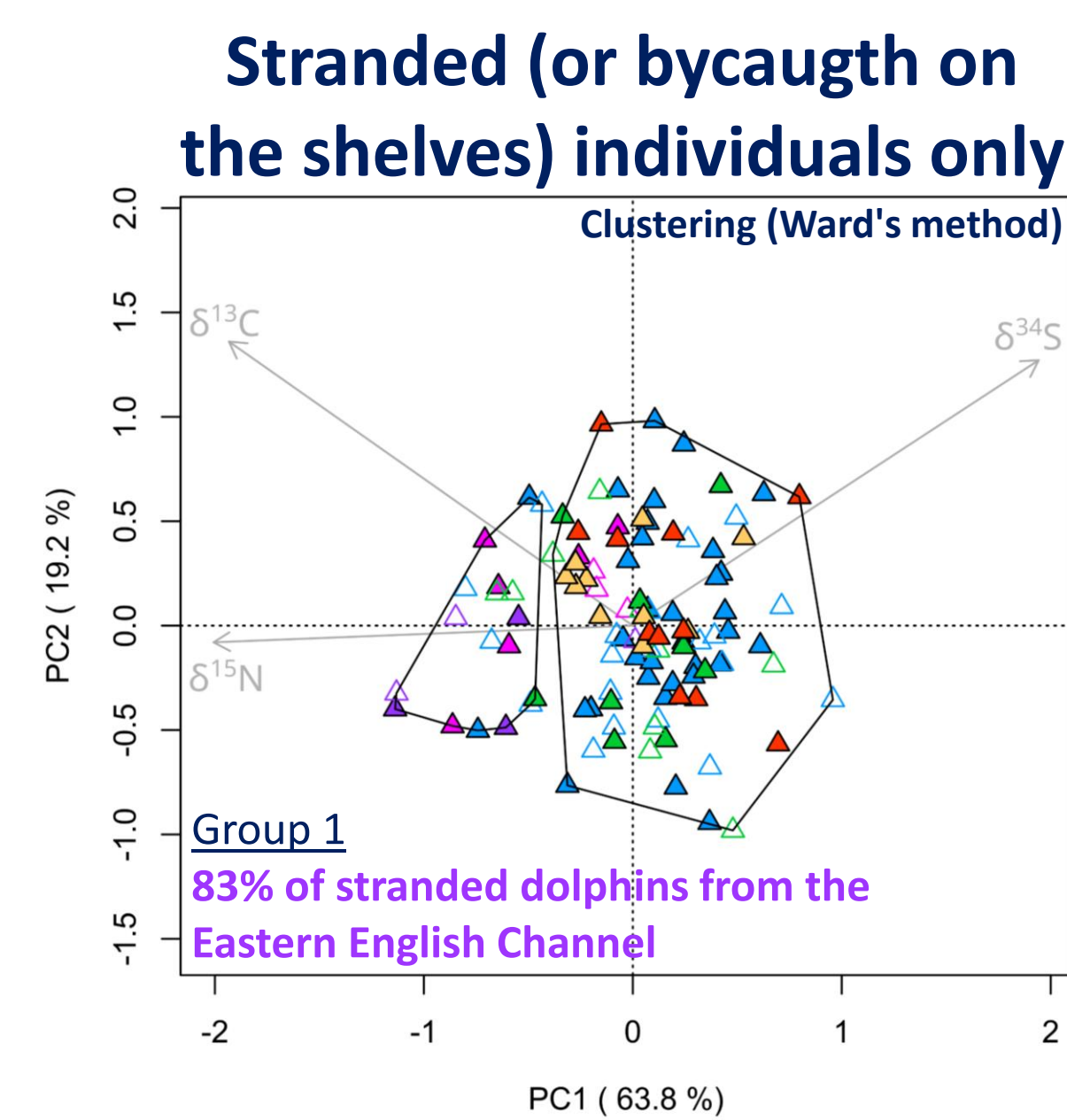
Carbon, nitrogen & sulphur isotope ratios



- Short-term segregation between stranded dolphins and oceanic individuals biopsied at sea.

MUSCLE => Medium-term scale (months)

δ¹³C, δ¹⁵N, δ³⁴S values



- Segregation of the stranded dolphins from the English Channel.

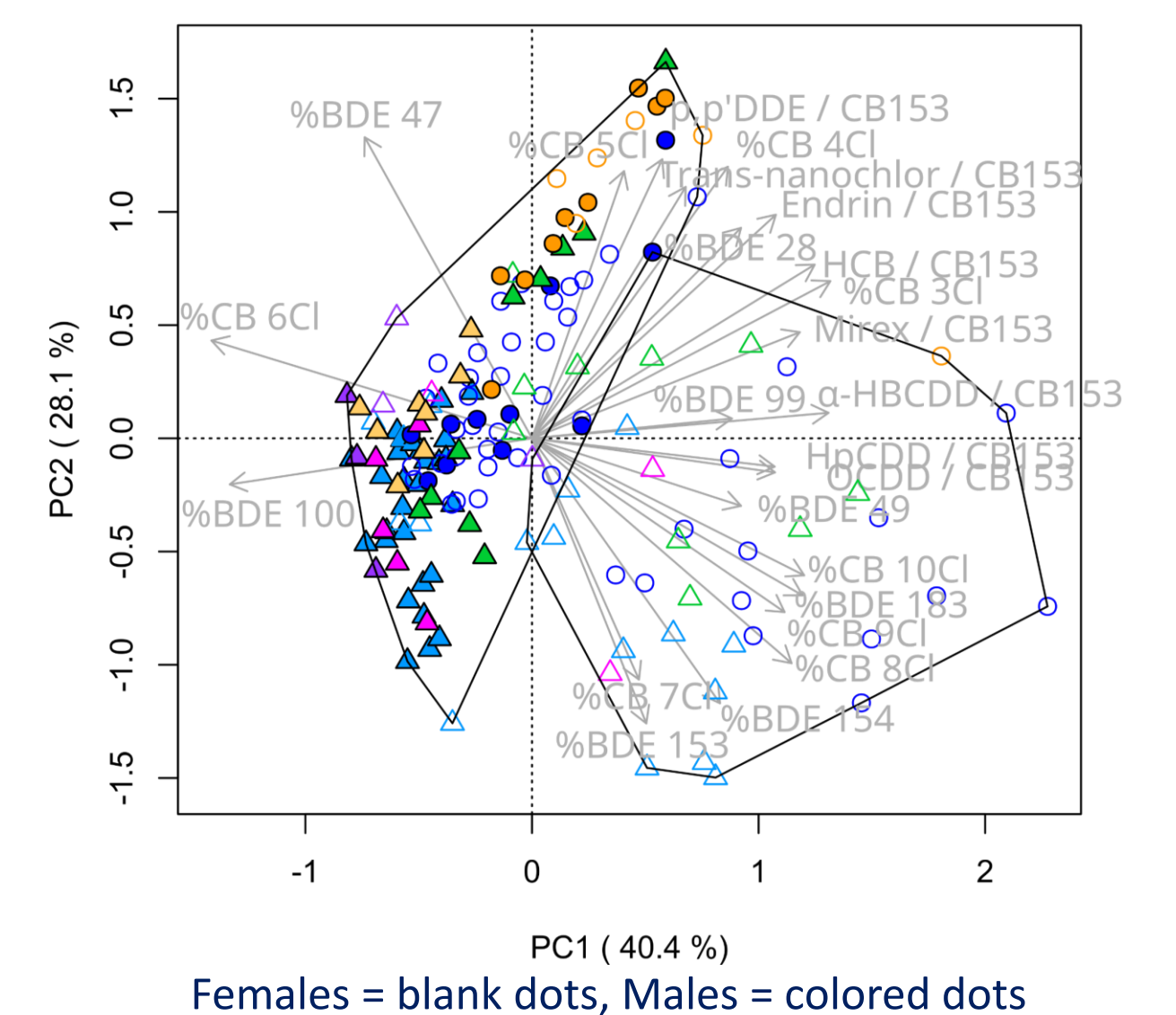
Take home message

- Ecological tracers = 3 Ecological Management Units (Assessment Unit) suggested for the common dolphin living in the North-East Atlantic waters.
- But more individuals needed to confirm EMU 3.

BLUBBER => Long-term scale (months to years)

Persistent organic pollutants (POPs) : PCBs, PBDEs, OCPs ratios

Up to 24 POP ratios considered / Females & Males



- POP ratios to limit the age effect.
- Selection of POP ratios to limit the correlation between them.
- Males only, due to significant gender effect.

12 POP ratios / Males only

