

Summary of presentation for eDNA workshop in Rennes (December 12-13th 2022)

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**Title** : Using eDNA to investigate the presence and population-level genetic diversity of common dolphins in the Bay of Biscay

**Summary** :

Since the 1990s, significant dolphin mortality events have occurred during the winter in the Bay of Biscay, which result in stranding peaks on the French Atlantic coast. During these events, most stranded dolphins on this stretch of coast are common dolphins (*Delphinus delphis*), which present marks caused by fishing gear, indicating these dolphins were incidentally caught. Over time, this level of incidental catch could constitute a significant threat to the common dolphin population in the northeastern Atlantic.

One of the fundamental questions that will be addressed by the DELMOGES program, is the existence of distinct populations in neritic versus oceanic zones. With that aim, an eDNA approach will contribute to the evaluation of population structure by providing a non-invasive sampling strategy to delimit and study observed populations.

Seawater was collected during a biopsy campaign in presence and absence of common dolphin pods. Mitochondrial DNA haplotype frequencies obtained from eDNA sequences will be compared to frequencies obtained using biopsy samples and from stranded dolphins to evaluate the quality of estimations obtained using this non-invasive approach. We will also attempt to estimate nuclear genetic diversity using eDNA samples by sequencing a SNP panel chosen from RADseq analyses conducted on dolphin tissue samples.