Genetics & Population Structure

- ✓ Genetic population structure only examined in scattered regions.
- ✓ Chen *et al.,* (2018) proposed at least 3 genetically distinct populations in the North Pacific Ocean.
- ✓ Pop's in the NP Ocean do not share any mitochondrial DNA haplotypes with pop's in the NA Ocean & Med Sea (Chen *et al.,* 2018; Gaspari *et al.,* 2007; Piboon *et al.,* 2022), implying a lack of matrilineal gene flow between major ocean basins for an extended period of time.
- ✓ Gaspari *et al.,* (2007) suggest those in UK waters are genetically distinct (with lower haplotype diversity) from those in the Med.
- ✓ British waters descend from a unique lineage with ecological & genetic distinctiveness sufficiently supporting the classification of the dolphins in British waters as an evolutionary significant unit (ESU) (Hodgins *et al.,* submitted).
- ✓ Consequently, there may be a lack of potential for immigration from other populations of Risso's dolphins.
- ✓ Genetically related BUT photo-ID evidences sub-structuring.
- ✓ Lack of matches = urgent need for site-specific appropriate management.
- ✓ Hybridisation?

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Habitat loss & degradation

- ✓ Lack of information regarding impact of habitat loss/degradation on Risso's
- ✓ Limited prey choice results in restrictions on suitable foraging habitat.
- ✓ Bottom trawling gear degrading known foraging sites; scallop dredger in NE Lewis MPA etc.
- ✓ Phase 1 wind-farm development on west coast of Lewis; and Phase 2 planned on northern boundary of NE Lewis MPA.
- ✓ Expansion of salmon farming on southern boundary of MPA (and northern boundary of SAC), evidenced preferred habitat.
- ✓ Azores – definition of critical nursing and calving habitat (Hartman *et al.,* 2014)
- ✓ Habitat loss/degradation more of a concern than perhaps considered.

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Other threats (e.g. hunting, climate change, emerging threats)

- ✓ No hunts in North Atlantic since 2010.
- ✓ Shift in abundance and distribution in the northwestern Med. Sea with declining encounter rates over coastal & continental slope & a more stable presence in the pelagic area, may be related to climate change/fishery pressure (Lanfredi *et al.,* 2022).
- ✓ Distributional shifts documented across their range: east coast of Russia (40-62°N) (Ryazanov & Ryazanova, 2023), Faroe Islands (62°N) (Hodgins and Gyldenkærne Dalsgarð *et al.,* in prep.), Iceland (65°N) (Chosson *et al.,* 2023), and 69°N latitude in coastal northern Norway (Eckerle *et al.,* 2025).
- ✓ Recent study forecast a climate-driven distributional shift with strong poleward redistribution (Chandelier and Kiszka, 2026).
- ✓ Emerging threats? Hunting?

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