

"Cool" genetic draft in unchanging environments

All genes regularly suffer *deleterious* mutations.

If some are only *slightly* deleterious ($Ns \approx 0.1$), then they may rise to high frequencies.

Chromosomes carrying different numbers of these mutations will have fitness differences several times larger than s .

Selection will therefore increase the frequencies of the "less-loaded" chromosomes and decrease the frequencies of the "more-loaded".

Result: a slow but continual selective sweep that can reduce linked *neutral* variation to *similar* levels in species with very *different* population sizes.

UPSHOT: Gillespie's "warm draft" model (good mutations rise) has a "cool draft" twin (bad mutations sink) that should apply to all loci, in all species, all the time.



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Photo: John Atkinson

The white is not whale, it's whale lice
(Crustacea, Amphipoda, Cyamidae)



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