* Genetic rescue
* Influence of population size – demographic sizes (census size)
* Ne is important – influence on effective of selection and extend of random genetic drift within the population – selection more effective in large population – small population drift more effect and migration effect too
* Genetic variation is the balance between selection, drift, migration, and mutation
* Mutation is a very slow process – consequence of losing genetic variation is concerning – take too long to replenish
* Genetic variation is important along with demographic characteristics and pop viability
* Genetic rescue has effect on intrinsic quality of populations – in turn influence community processes – effect on demographic characteristics – influence ability to respond to new environment
* Risk of ibd and random genetic drift
* Effects of losing species is difficult to predict – when otters were overhunted – sea urchins go up – kelps went down – effect ecosystem processes
* Growing evidence for benefits of genetic rescue – increase in birth rate
* Difficult to measure fitness in the wild – need long term dataset and research program
* Scandinavian wolves – some populations introduced – migrants had more success – proportion of breeding pairs increase
* Hybridisation increases longevity
* Florida puma – ibd as consequences of genetic drift (small N) – measure heterozygosity – looking across genome – no heterozygosity in the colours – can measure proportion of genomes where there are long runs of homozygosity (no genetic variation) – large proportion of homozygosity in genome compared to Brazil population – small isolated population – require ongoing genetic rescue – inbreeding is still accumulating rapidly
* Purging – to get rid of deleterious alleles – ibd isn’t an issue in small population because deleterious alleles are purged/removed from the population through natural selection – recessive alleles masked in heterozygotes – as Ne increases the genetic load of heterozygotes increase – lethal equivalent has a relationship in opposite direction – lethal is largest in small population – accumulation of deleterious in small population because selection is less effective in small population
* The longer the bottleneck duration – the greater chance of the deleterious mutation load being removed
* Genomic approach on vaquita – critically endangered – portion of deleterious alleles in homozygous form is higher – very low in genome wide – purging was an important process and moved the deleterious alleles – not doomed by ibd
* Even no ibd in small population – limit ability to adapt to environmental changes
* Importance of getting more data on fitness and lifetime fitness
* Australian sea lion – both males and females do not disperse and breed among colonies – strong genetic structure – potential of increase inbreeding – in Aus problem is bycatch – if 2 or more were caught in SA, will trigger shutdown of the fishery – got SNPs dat – linkage disequilibrium to estimate Ne is 424 – can model consequences of different conservation strategies – even the 2 individuals trigger limit still get ibd