

# LECTURE: Drift in Populations that Vary in Size

- Heterozygosity is often surprisingly small. Why?
- Urn model assumes  $N$  is constant. What if it varies?
- Bottleneck: a temporary reduction in  $N$
- Decline in  $\mathcal{H}$  is faster than recovery.
- Effective population size is harmonic mean of  $N_t$

- Harmonic mean is sensitive to small sizes.

**How a bottleneck in population size affects  
gene diversity**