PBG 200A Notes

Sam Fleischer

November 16, 2016

- Supposing fitness of A_1A_1, A_1A_2, and A_2A_2 are 1, $1-sh$, and $1-s$, respectively, then an equlibrium frequency is

$$q_{\text{eq}} = \frac{\mu}{sh} \tag{1}$$

- Migration-Selection balance can preserve a near-fixation equilibrium
- In the simple hapliod model, migration plays the same role as mutation.
- If the migration rate is high enough, we get "migration swamping" where one allele wins for a particular set of initial conditions.
- interaction between selection and drift
  - when selection is strong we can ignore drift
  -

$$p_L = P_0 \times 1 + P_1 \times p_L + P_2 \times p_L^2 + P_3 \times p_L^3 + \ldots \quad \Longrightarrow \quad p_L = 1 - s \qquad \text{and} \qquad p_f = s \tag{2}$$

- Current Status of views on molecular evolution
  - the vast majority of differences between humans and chimps are due to genetic drift, not selection.