

For Frankel & Soulé (1981):

- (1) What is meant by qualitative and quantitative genetic diversity? How are they measured? Why might they be important to conservation?
- (2) How does effective population size ( $N_e$ ) differ from population size?
- (3) What evidence exists to support the contention that heterosis is important in maintaining fitness of wild populations? Do you find these arguments convincing? Why or why not?
- (4) Do you agree that populations with high homozygosity levels represent “evolutionary dead-ends”?
- (5) Does inbreeding necessarily lead to reduced fitness?
- (6) Are you comfortable with the rule that  $N_e > 50$  for populations to be viable? Why or why not?

For Ehrlich (1983):

- (7) What is  $N_e$  and heterozygosity in butterfly populations? How has this impacted their survival?
- (8) What factors have led to loss of butterfly populations?
- (9) It appears that Frankel & Soulé’s arguments may not be applicable at least to butterflies. Why is their argument flawed?

For Ehrlich & Murphy (1987)

- (10) What is meant by a ‘metapopulation’? Why does *Euphydryas editha bayensis* exist as metapopulations on the central California coast?
- (11) How important is genetics in predicting the survival of individual subpopulations? What factors determine their long-term survival?
- (12) Endangered species laws can only protect places where a species occurs. How could this be a problem for *Euphydryas editha bayensis*? What is required to protect this species?

For Krukeberg & Rabinowitz (1985)

- (13) What are the different pathways that a species can become limited to a small area?
- (14) How might this impact their expected genetic diversity?
- (15) What does ‘rarity’ mean? What are the different ways that a species can be ‘rare’?
- (16) How might optimum conservation strategies vary between these different types?