

1. Crawley (1993 p245) reported the number of recoveries of dead ringed tawny owls from 2 habitats: oak and birch woodland. The number of marked (ringed) owls released was 75 in oak woodland, 49 in birch woodland.

If 23 dead ringed owls were recovered, calculate the expected number in each habitat if recoveries were in proportion to release, with a ratio of 75:49.

Oak $\hat{f} =$ _____ birch $\hat{f} =$ _____

The observed recoveries over 7 years were 13 (oak) and 10 (birch).

Calculate the recoveries in each habitat, as a percentage of number released in that habitat.

Oak % = _____ birch % = _____

Calculate the $\ln L$, the log likelihood ratio in each habitat $\ln L = f \ln \left(\frac{f}{\hat{f}} \right)$

oak $\ln L =$ _____

birch $\ln L =$ _____

Calculate the goodness of fit of observed recovery rate to that expected from a recovery rate proportional to release.

G = _____

Is this difference statistically significant? _____ $\chi^2_{[0.05, 1]} = 3.84$

2. For the following, list the number of explanatory variables.

Explanatory

Analysis of parasite load in three strains of mosquito, controlled for altitude.

Survival odds of insects at 3 different exposures to an insecticide.
