Biosphere II Summary Sheet

1. Population Estimation C = total catch in the 2^{nd} sample = 30 M = total catch in the 1^{st} sample = 30 R = number of recaptures in the 2^{nd} sample = 18

$$N = \frac{(M+1)(C+1)}{R+1} = \frac{(30+1)(30+1)}{18+1} \approx 51$$

Variance = $\frac{N^2(C-R)}{(C+1)(R+2)} = \frac{51^2}{(30+1)(18+2)} \approx 50$
 $\sigma = \sqrt{Variance} = \sqrt{49.6} \approx 7$

From the number of fish caught in the two samples and the number of recaptures, we estimate that the fish population size in the mangrove habitat is 50. This is likely an underestimation of the real population size because the mesh size did not allow us to capture fish of small size (smaller than 35mm).



Based on the distribution of body length above, most of the sample have their body length between 60-89mm. 5 of the sampled fish have their size greater than 90mm. The smallest size in our sample is 47mm and the largest size is 177mm.

2. Creative Work

