

## Effective Population Size

While the minimum viable population includes all individuals of all ages in the population, the effective population size considers only those individuals that are reproductive. Only reproductive individuals contribute to population maintenance. For example, if the minimum viable population is 100 individuals but in any year 50 of those individuals are juveniles (pre-reproductive) and 30 individuals are post-reproductive age, then only 20 individuals are contributing genetically to population maintenance and species survival. Thus, the potential for inbreeding or population extirpation is great. Therefore, some conservation biologists consider the effective population size to be the more important measure for population conservation.

Effective population size ( $N_e$ ) is calculated as:

$$N_e = 4N_fN_m / N_f + N_m$$

Where:

$N_f$  = number of reproductive females

$N_m$  = number of reproductive males



