

Course- WL 703, Principles of Wildlife Management

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8th Lecture

Wildlife reproduction:

Ability of animal to produce offspring of its own kind

Most mammals are viviparous, giving birth to live young. However, the five species of monotreme, the platypuses and the echidnas, lay eggs.

Birds produce offspring by laying eggs which are fertilized through sexual **reproduction**. They are usually laid in a nest and incubated by the parents. Most **birds** have an extended period of parental care after hatching

1. Fecundity

Ability to produce eggs or sperm

Major concern is the fecundity rate of female

Rate of fecundity: number of eggs produce per female

Fecundity rate of birds is less important than mammals because all birds are not likely to incubate

In mammals rate of ovulation is more responsible to environmental factors

2. Natality

Production of new individual by birth or hatching

Rate of natality: number of young produced per female

It is less than fecundity rate always

3. Recruitment

Refers to production of sexually mature animals

Rate of recruitment---- number of sexually mature individuals produced

Monogamy:

Pairing between one male and female e.g birds, beaver

Polygamy:

Two types

Polyandry----one female with several male

e.g shore birds, grey mongoose

Polygyny

One male with several female

E.g ungulate (sheep). fowls

4. Gestation or Incubation

Incubation is the process by which certain oviparous (egg-laying) animals hatch their eggs; it also refers to the development of the embryo within the egg. Multiple and various factors are vital to the incubation of various species of animal. In many species of reptile for example, no fixed temperature is necessary, but the actual temperature determines the sex ratio of the offspring. In birds in contrast, the sex of offspring is genetically determined, but in many species a constant and particular temperature is necessary for successful incubation

5. Parental care

Common in birds and mammals- paternal care is parental investment provided by a male to his own offspring. It is a complex social behaviour in vertebrates associated with animal mating systems, life history traits, and ecology. Paternal care may be provided in concert with the mother (biparental care) or, more rarely, by the male alone (so called exclusive paternal care).

The provision of care, by either males or females, is presumed to increase growth rates, quality, and/or survival of young, and hence ultimately increase the inclusive fitness of parents. In a variety of vertebrate species (e.g., about 80% of birds and about 6% of mammals), both males and females invest heavily in their offspring. Many of these biparental species are socially monogamous, so individuals remain with their mate for at least one breeding season.

6. Population size and Reproduction

1. Density dependant reproduction

Positive density-dependence: In which population growth is facilitated by increased population density.

A known example of **positive density dependence** is the Allee-effect when population growth rate is very low at low **density**, due to the low chance to find mates. ... Many plants "evade" seed predation by producing large numbers of seeds at once, saturating seed-eaters.

Negative density-dependent effects occur if a vital rate decreases as **density** increases, positive effects occur if both increase. ... The population responds with a drop in one or more vital rates, usually growth and survivorship, but also fecundity and recruitment