

## Some Species Definitions

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**Biological Species Concept** (Mayr, 1991): A species is a group of interbreeding natural populations that is reproductively isolated from other such groups.

**Cohesion Concept** (Templeton, 1989): A species is the most inclusive population of individuals having the potential for phenotypic cohesion (genetic or demographic exchangeability).

**Evolutionary Species Concept** (Simpson 1961, Wiley 1978, 1981): A species consists of a population or group of populations that share a common evolutionary fate through time.

Simpson (1961:153): An evolutionary species is a lineage (an ancestral-descendant sequence of populations) evolving separately from others and with its own unitary evolutionary (fate) role and tendencies.

**Genealogical Species Concept** (Baum and Shaw 1995): A species is a set of populations for which the gene trees (of loci examined) are monophyletic. Species are exclusive groups in which all members are more closely related to one another than any is to individual of an outside group.

**Genotypic Cluster Concept** (Mallet, 1995): “A species is a [morphologically or genetically] distinguishable group of individuals that has few or no intermediates when in contact with other such clusters. Species...are...identifiable genotypic clusters...recognized by a deficit of intermediates, both at single loci (heterozygous deficits) and at multiple loci (strong correlations or disequilibria between loci that are divergent between clusters).”

### **Phylogenetic Species Concept**

**Diagnosability Camp** (Cracraft, Nixon, Platnik, Wheeler, etc.): The smallest diagnosable cluster of individual organisms within which there is a parental pattern of ancestry and descent (Cracraft 1983: 170). The smallest detected samples of self-perpetuating organisms that have unique sets of characters (Nelsen and Platnik, 1981:12).

**Monophyly Camp** (Donoghue, Mishler, de Queiroz, etc.): The smallest exclusive monophyletic group. Or “a population or group of populations defined by one or more apomorphous features” (Rosen 1979).

**Recognition Concept** (Paterson, 1985): Species are the most inclusive population of individual biparental organisms which share a common fertilization system. A species is “a field for gene recombination.”

**Unified Species Concept** (De Quieroz, 2007): A species is a separately evolving metapopulation lineage.