## What is a Species?



What information do scientists use to define species?
1.
2.

## Same



Eastern Red-backed Salamander

Led-back phase
Red-back phase


## Different



Gray Treefrog


Cope's Gray Treefrog

# What biological factor defines a species? 

## Reproduction

## What is a species?

- Groups of interbreeding populations that are reproductively isolated from other such groups


## Tiger

Lion


Lions and tigers are reproductively isolated from each other


## How many species are there?

1.7 million known species

## Rank groups by abundance



| Bacteria |  |
| :--- | :--- |
| Birds |  |
| Fish |  |
| Insects and Spiders |  |
| Amphibians |  |
| Mammals |  |
| Other invertebrates |  |
| Plants |  |
| Reptiles |  |


| 1 | Mammals | 5,416 |
| :--- | :--- | ---: |
| 2 | Amphibians | 6,200 |
| 3 | Reptiles | 8,240 |
| 4 | Birds | 9,934 |
| 5 | Bacteria | 10,000 |
| 6 | Fish | 29,300 |
| 7 | Other invertebrates | 168,000 |
| 8 | Plants | 287,655 |
| 9 | Insects and Spiders | $1,024,445$ |



## How many species are there?

- Estimated 2-10 million
- 15,000 new species/year
- 600 years to classify all species

Known Biodiversity (excluding microbes)
Approximately 1.7 million named species of plants and animals.


1 square $=10,000$ species

Estimated Biodiversity (excluding microbes) 10 million species

