Module 3: Populations - Notes guide

Definition: a group of the ________________ in an area

Some questions to start our thinking...

In a given ecosystem, is there a limit to the number of organisms it can support?

Which ecosystems most likely have more limiting factors than others?

What are some limiting factors that control population growth?

Gouldian finches are small Australian birds that often live in small flocks.

What would limit their population’s size? (List them here)

Four Factors that affect population numbers:

- Natality -
- Mortality -
- Immigration -
- Emigration -

Why is density so important?

Density is the ____________________________

If density is high, there is a high concentration of individuals in that area

If density is low, there is a low concentration of individuals in that area

What sort of things are dependent on density?

Density dependent or independent?

If there’s a large number of organisms in one area, will disease spread faster or slower?

If there’s a drought and wildfires decrease the food supply, was density a factor?
How can we more easily see a population’s growth?

S-curve - __________________ J-curve - __________________ Boom & Bust curve – ______________

Status of the Gouldian finch

Ongoing research by Dr. Sarah Legge is telling us about how the Gouldian finch is doing in the wild

Dr. Legge has discovered that the __________________ on which the finches feed only produce seed if they haven’t been _________________________________.

This evidence may change how ______________ are used to control local plant populations.

According to the Australian Department of the Environment, the bird is listed as endangered and the ______________ ________________ is keeping the species numbers up.

Age-Sex Pyramids (histograms)  Show __________ versus __________ segments of population

Which of the pyramids below show the greatest population growth? ________________________________

Which of the pyramids below show a stable population? How so? ________________________________

What does it mean to be endemic? ___________________________________________________________

An island  A specific habitat type  A defined zone

Endemic species are ________________________________ because these populations are confined to a small geographic area.

Some events can increase the pressure felt by these small, localized populations (H.I.P.P.O. Dilemma)

H_________________  I_________________  P_________________

P_________________  O_________________

Examples of Endemic Species

Islands - Most common places for endemics because they are geographically isolated

____________________________________________

____________________________________________
Non-Island Examples of Endemic Species

Florida Scrub Jay - Found only in ____________________________ of a small area of central Florida

Vulnerable due to ____________________________

Cape Vulture - Found only in ____________________________

Endangered due to loss of __________, poisoning, loss of foraging habitat, and electrocution on cables.

**Biodiversity hotspots are areas where there is a ____________________________ contained in a unique geographic area. Endemic species here can be at greater risk.**

Puerto Rican Parrot Project

This species is ____________________________ to the islands of Puerto Rico

Works to maintain a ____________________________ of Amazona vittata

__________________________ has continued to increase

Wild and captive populations total approximately ____________________________

Two free flying flocks exist and a third being planned

**Age-sex pyramid – Puerto Rican Parrots**

What information is included in this diagram? ____________________________

Managed Populations

Institutions like zoos and ____________________________ manage populations

Programs like Species Survival Plans (SSPs) and Population Management Plans in zoos and Model Avicultural Programs ensure “__________________________” are kept genetically diverse

This can ensure ____________________________ and/or ____________________________ for many species

Privately-held populations

Private aviculturists like Nancy Speed of Mississippi breed the ____________________________, a species endangered due to habitat loss

Permits are required to move birds across state lines and careful record-keeping is necessary to monitor genetic diversity when birds are listed under the ____________________________

It is vital for managed breeding to continue since __________ has consistently decreased for many species.

Designed by the American Federation of Aviculture  www.afabirds.org