Biology from Hawaii Name

2014

**Food Webs**

**Introduction**

Ecology is the science of biological interactions; one primary way species interact is by eating each other. A picture showing all of the eating in an ecosystem is called a **food web**. Food webs are useful to predict the effect of extinctions or population booms. For example, if a swarm of sharks moves into the ecosystem (right), then fish populations will decline and seagulls should starve.

Arrows go in the direction of energy transfer, into the mouth of the eater. **Producers** (often plants) only have arrows pointing away from them, **consumers** and **decomposers** have some arrows pointing toward them, and **top predators** only have arrows pointing toward them.

***Manana* Island** is a small islet off the east coast of O‘ahu. It was nicknamed *"Rabbit Island"* because it looks like a rabbit's head and it used to be the home for a population of introduced European rabbits.

**Procedure**

1. Research the terrestrial species of *Manana* Island (below) and list each one's diet.

2. Draw a food web that connects the terrestrial species of *Manana* Island.

**Results**

 Table 1: terrestrial species of *Manana* Island

|  |  |  |
| --- | --- | --- |
| **Scientific name** | **Common name** | **Diet** |
| *Argemone glauca* | *pua kala*/Hawaiian poppy |  |
| *Boerhavia coccinea* | red spiderling |  |
| *Cenchrus echinatus* | sandspur grass |  |
| *Ctenocephalides felis* | cat flea (can live on rabbits) |  |
| *Fregata minor* | *‘iwa*/frigate bird  |  |
| *Gryllodes sigillatus* | cricket |  |
| *Heteropogon contortus* | *pili* grass |  |
| *Mus musculus* | mouse |  |
| *Oryctolagus cuniculus* | European rabbit |  |
| *Prosopis pallida* | *keawe*/Mesquite |  |
| *Solenopsis geminata* | red fire ant |  |
| *Xenopsylla cheopis* | rat flea (can live on mice) |  |

**Results (continued)** *draw your food web here*

**Discussion**

1. For a long time, people wanted to eradicate rabbits from *Manana* Island because they are not native to Hawaii. How would eliminating rabbits affect the population sizes of other species?

2. Decomposers are an important part of any ecosystem. They eat dead things, and in the process turn left-over molecules into a form that plants can eat. **Using a different color**, add the decomposers *soil bacteria* and *fungi* to your food web.

|  |  |  |
| --- | --- | --- |
| **Grading** | points worth | points earned |
| **Results***list the diet of each species, accurately translate into a food web* | **8** |  |
| **Discussion***thorough answers show effects on nearly all species* | **2** |  |
| **Total** | **10** |  |