Investigating Limiting Factors for a/an

*[insert animal population]*

There are *[insert animal population]* living *[insert environment where that animal population lives]*. The size of the *[insert animal]* population living there has decreased over the past five years. Some factors that might be limiting the *[insert animal]* population are listed in the box below:

|  |  |  |  |
| --- | --- | --- | --- |
| Food | Water | Disease | Predation |
| Shelter | Space | Parasitism | Nesting sites |

Three neighbors living near the *[insert environment where that animal population lives]* have made some observations that may be related to the decrease in the *[insert animal]* population.

1st neighbor’s observation: ***[Insert 1st neighbor’s observation. Note: The observation does not necessarily need to have been made by a “neighbor.” Any person for whom it would be reasonable to make the observation is acceptable.]***

**Explain** how the *[insert animal]* population might be limited by what the neighbor saw.

**Describe** **an observation** you or another scientist might make that would support your explanation.

2nd neighbor’s observation: ***[Insert 2nd neighbor’s observation.]***

**Explain** how the *[insert animal]* population might be limited by what the neighbor saw.

**Describe** **an observation** you or another scientist might make that would support your explanation.

3rd neighbor’s observation: ***[Insert 3rd neighbor’s observation.]***

**Explain** how the *[insert animal]* population might be limited by what the neighbor saw.

**Describe** **an observation** you or another scientist might make that would support your explanation.

Scoring Plan

*Correct answers written in the wrong section of a particular assessment, but intended for the appropriate prompt, will be graded in full. For example, observable evidence can appear under the limiting factor hypothesis prompt.*

**1st Observation: *[Insert 1st observation.]***

|  |  |
| --- | --- |
| Student’s explanation of how the *[insert animal]* population might be limited by *[insert 1st observation]* is ecologically reasonable.   * A student’s explanation may contain factual errors concerning the characteristics or behaviors of particular species, but if the explanation is otherwise ecologically reasonable, it is still awarded credit. | 2 pts. |
| Student describes evidence that would support his or her explanation of how the *[insert animal]* population might be limited by *[insert 1st observation]*.  *Point is awarded if the student provides argumentation based on prior knowledge or reasoning, even if an observation is not proposed.*  *For example, in the case of a fox preying on a goose population, the following response would be acceptable:*  *“Foxes are known to eat other birds, so they might eat geese.”* | 1 pt. |
| This evidence, as described, would be observable.  *Point is awarded based on observability, not how well the student’s response supports the previous explanation.* | 1 pt. |

**2nd Observation: *[Insert 2nd observation.]***

|  |  |
| --- | --- |
| Student’s explanation of how the *[insert animal]* population might be limited by *[insert 2nd observation]* is ecologically reasonable. | 2 pts. |
| Student describes evidence that would support his or her explanation of how the *[insert animal]* population might be limited by *[insert 2nd observation]*. | 1 pt. |
| This evidence, as described, would be observable. | 1 pt. |

**3rd Observation: *[Insert 3rd observation.]***

|  |  |
| --- | --- |
| Student’s explanation of how the *[insert animal]* population might be limited by *[insert 3rd observation]* is ecologically reasonable. | 2 pts. |
| Student describes evidence that would support his or her explanation of how the *[insert animal]* population might be limited by *[insert 3rd observation]*. | 1 pt. |
| This evidence, as described, would be observable. | 1 pt. |