**Study Guide: Unit 2 Biodiversity**

Hints: Look over notes and/or handouts 10 minutes EVERY night. If you feel insecure about a topic, look for self-help videos online. Come see me in the morning, bear time, or afternoon! Play the Kahoots I sent you. Check out the website hchscollier.weebly.com! Most of all, if you believe in yourself as much as I do, you will be AMAZING!

**Intro to Biodiversity**: Explain levels of biodiversity and their importance to ecosystems

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| Check | Essential Knowledge |
|  | Biodiversity in an ecosystem includes genetic, species, and habitat diversity |
|  | The more genetically diverse a population is, the better it can respond to environmental stressors. Additionally, a population bottleneck can lead to a loss of genetic diversity. |
|  | Ecosystems that have a larger number of species are more likely to recover from disruptions |
|  | Loss of habitat leads to a loss of specialist species, followed by a loss of generalist species. It also leads to reduced numbers of species that have large territorial requirements. |
|  | Species richness refers to the number of different species found in an ecosystem. |

**Ecosystem Services**: **Describe** ecosystem services and the results of human disruptions to them.

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| Check | Essential Knowledge |
|  | There are four categories of ecosystem services: provisioning, regulating, cultural, and supporting |
|  | Anthropogenic activities can disrupt ecosystem services, potentially resulting in economic and ecological consequences |

**Island Biogeography**: **Describe** island biogeography and the role it plays in evolution.

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| Check | Essential Knowledge |
|  | Island biogeography is the study of the ecological relationships and distribution of organisms on islands, and of these organisms’ community structures. |
|  | Islands have been colonized in the past by new species arriving from elsewhere. |
|  | Many island species have evolved to be specialists versus generalists because of the limited resources, such as food and territory, on most islands. The long-term survival of specialists may be jeopardized if and when invasive species, typically generalists, are introduced and outcompete the specialists |

**Ecological Tolerance**: **Describe** ecological tolerance**.**

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| Check | Essential Knowledge |
|  | Ecological tolerance refers to the range of conditions, such as temperature, salinity, flow rate, and sunlight that an organism can endure before injury or death results. |
|  | Ecological tolerance can apply to individuals and to species. |

**Natural Disruptions to Ecosystems:** **Explain** how natural disruptions, both short-and long-term, impact an ecosystem.

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| Check | Essential Knowledge |
|  | Natural disruptions to ecosystems have environmental consequences that may, for a given occurrence, be as great as, or greater than, many human-made disruptions. |
|  | Earth system processes operate on a range of scales in terms of time. Processes can be periodic, episodic, or random. |
|  | Earth’s climate has changed over geological time for many reasons. |
|  | Sea level has varied significantly as a result of changes in the amount of glacial ice on Earth over geological time. |
|  | Major environmental change or upheaval commonly results in large swathes of habitat changes. |
|  | Wildlife engages in both short- and long-term migration for a variety of reasons, including natural disruptions. |

**Adaptations**: **Describe** how organisms adapt to their environment

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| Check | Essential Knowledge |
|  | Organisms adapt to their environment over time, both in short- and long-term scales, via incremental changes at the genetic level. |
|  | Environmental changes, either sudden or gradual, may threaten a species’ survival, requiring individuals to alter behaviors, move, or perish. |

**Ecological Succession**: Describe ecological succession and its effect on ecosystems.

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| Check | Essential Knowledge |
|  | There are two main types of ecological succession: primary and secondary succession. |
|  | A keystone species in an ecosystem is a species whose activities have a particularly significant role in determining community structure |
|  | An indicator species is a plant or animal that, by its presence, abundance, scarcity, or chemical composition, demonstrates that some distinctive aspect of the character or quality of an ecosystem is present. |
|  | Pioneer members of an early successional species commonly move into unoccupied habitat and over time adapt to its particular conditions, which may result in the origin of new species |
|  | Succession in a disturbed ecosystem will affect the total biomass, species richness, and net productivity over time |