**Study Guide: Unit 3 Human Population**

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!

3.1 Generalist & Specialist Species: **Identify** differences between generalist and specialist species

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| Check | Essential Knowledge |
|  | Specialist species tend to be advantaged in habitats that remain constant, while generalist species tend to be advantaged in habitats that are changing |

3.2 K-Selected r-Selected Species: **Identify** differences between K- and r-selected species.

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| Check | Essential Knowledge |
|  | K-selected species tend to be large, have few offspring per reproduction event, live in stable environments, expend significant energy for each offspring, mature after many years of extended youth and parental care, have long life spans/life expectancy, and reproduce more than once in their lifetime. Competition for resources in K-selected species’ habitats is usually relatively high |
|  | r-selected species tend to be small, have many offspring, expend or invest minimal energy for each offspring, mature early, have short life spans, and may reproduce only once in their lifetime. Competition for resources in r-selected species’ habitats is typically relatively low |
|  | Biotic potential refers to the maximum reproductive rate of a population in ideal conditions |
|  | Many species have reproductive strategies that are not uniquely r-selected or K-selected, or they change in different conditions at different times |
|  | K-selected species are typically more adversely affected by invasive species than r-selected species, which are minimally affected by invasive species. Most invasive species are r-selected species |

3.3 Survivorship Curves: **Explain** survivorship curves.

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| Check | Essential Knowledge |
|  | A survivorship curve is a line that displays the relative survival rates of a cohort—a group of individuals of the same age—in a population, from birth to the maximum age reached by any one cohort member. There are Type I, Type II, and Type III curves. |
|  | Survivorship curves differ for K-selected and r-selected species, with K-selected species typically following a Type I or Type II curve and r-selected species following a Type III curve. and Type III curves |

3.4 Carrying Capacity: **Describe** carrying capacityand the impact of carrying capacity on ecosystems**.**

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| Check | Essential Knowledge |
|  | When a population exceeds its carrying capacity (carrying capacity can be denoted as K), overshoot occurs. There are environmental impacts of population overshoot, including resource depletion |
|  | A major ecological effect of population overshoot is dieback of the population (often severe to catastrophic) because the lack of available resources leads to famine, disease, and/or conflict. |

3.5 Population Growth and Resource Availability: **Explain** how resource availability affects population growth.

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| Check | Essential Knowledge |
|  | Population growth is limited by environmental factors, especially by the available resources and space |
|  | Resource availability and the total resource base are limited and finite over all scales of time |
|  | When the resources needed by a population for growth are abundant, population growth usually accelerates |
|  | When the resource base of a population shrinks, the increased potential for unequal distribution of resources will ultimately result in increased mortality, decreased fecundity, or both, resulting in population growth declining to, or below, carrying capacity |

3.6 Age Structure Diagrams: **Explain** age structure diagrams

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| Check | Essential Knowledge |
|  | Population growth rates can be interpreted from age structure diagrams by the shape of the structure |
|  | A rapidly growing population will, as a rule, have a higher proportion of younger people compared to stable or declining populations |

3.7 Total Fertility Rate: **Explain** factors that affect total fertility rate in human populations

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| Check | Essential Knowledge |
|  | Total fertility rate (TFR) is affected by the age at which females have their first child, educational opportunities for females, access to family planning, and government acts and policies |
|  | If fertility rate is at replacement levels, a population is considered relatively stable |
|  | Factors associated with infant mortality rates include whether mothers have access to good healthcare and nutrition. Changes in these factors can lead to changes in infant mortality rates over time. |

3.8 Human Population Dynamics: **Explain** how human populations experience growth and decline.

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| Check | Essential Knowledge |
|  | Birth rates, infant mortality rates, and overall death rates, access to family planning, access to good nutrition, access to education, and postponement of marriage all affect whether a human population is growing or declining |
|  | Factors limiting global human population include the Earth’s carrying capacity and the basic factors that limit human population growth as set forth by Malthusian theory |
|  | Population growth can be affected by both density-independent factors, such as major storms, fires, heat waves, or droughts, and density-dependent factors, such as access to clean water and air, food availability, disease transmission, or territory size |
|  | The rule of 70 states that dividing the number 70 by the percentage population growth rate approximates the population’s doubling time. |

3.9 Demographic Transition: **Define** the demographic transition

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| Check | Essential Knowledge |
|  | The demographic transition refers to the transition from high to lower birth and death rates in a country or region as development occurs and that country moves from a pre-industrial to an industrialized economic system. This transition is typically demonstrated through a four-stage demographic transition model (DTM). |
|  | Characteristics of developing countries include higher infant mortality rates and more children in the workforce than developed countries. |