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Undergraduate

# ABANDONED PLANET

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In the not so distant future, the earth lies barren. All the lush greenery has dried; there is no buzzing of insects, no chirping of birds, just an eerie silence. Wind whistles through empty, abandoned cities, as a human legacy of waste and destruction is left on earth. A situation where humans can no longer inhabit the earth is not just an overused plot device in recent films, but a real possibility with the current human usage of land and resources.

A main reason, and most realistic, reason as to why humans would need to abandon earth is due to the depletion of resources. As famously stated by Thomas Malthus, "the power of population is so superior to the power in the earth to produce subsistence for man, that premature death must in some shape or other visit the human race." (Malthus,

housing to accommodate more families affects the structure of vegetation and in turn the biodiversity of that area (Kluza, 1999). Smaller families are more numerous and they consume more land space, wood, fuel and water among other vital resources (Liu, 2003).

Human conflict creates an even bigger drain on resources than daily life. During warfare, there is heavy use of chemicals and oil, both of which damage the environment and deplete resources (Jorgenson, 2010). Even in times of peace, militaries are costly to the environment. The maintenance and use of equipment involves the use of thinners, solvents, lubricants, degreasers, fuels, pesticides, and propellants (Jorgenson, 2010). Land use for military training and testing also uses up valuable space that could be used for agriculture or energy purposes. Militaries not

***"THE POWER OF POPULATION IS SO SUPERIOR TO THE POWER IN THE EARTH TO PRODUCE SUBSISTENCE FOR MAN, THAT PREMATURE DEATH MUST IN SOME SHAPE OR OTHER VISIT TO HUMAN RACE"***

1798). Though stated nearly 200 years ago, Malthus's predictions are rapidly coming true. At the current rate of consumption, humans have an ecological footprint of 1.6 planets (Dietz, 2007). There are only 0.25 Hectares of useable land per capita (Wackernagel, 1999). This figure can only get worse as the demands of an exponentially growing population increase. The increasing affluence of the world will also affect the demands on the earth. Although less developed countries have larger populations, wealthier countries have larger ecological footprints (Dietz, 2007). With less developed countries catching up in terms of technology and desire for a higher standard of living, soon there will be even larger populations demanding resources that the earth simply doesn't have.

In addition to a growing population putting new stresses on the environment, a shift in social dynamics increases land and resource use. Now there is a shift from large families living under one roof to smaller nuclear families that each have their own homes (Liu, 2003). In fact this shift to individual families is occurring at a rate faster than the actual population growth (Liu, 2003). The increase in the need for

only deplete land, but also contribute to fossil fuel emissions. The U.S military in just the Middle East consumes 1.3 billion gallons of oil annually (Jorgenson, 2010). To put that in perspective, that is more than the entire country of Bangladesh consumes annually.

Overpopulation and depletion of resources are not the only reasons that could force humans to seek habitation elsewhere. The reduction in biodiversity also contributes a significant reason for our planet's inhabitability. Biodiversity provides many ecosystem services including prevention of certain natural disasters such as fires, and can even help to mitigate the spread of diseases (Cardinale, 2012). A reduction in biodiversity would drastically impact agriculture by making crops more susceptible to diseases and parasites (Cardinale, 2012). The loss of biodiversity would be disastrous on a scale comparable to drought, climate change, ozone depletion and fires (Cardinale, 2012).

Humans contribute to loss of biodiversity in a number of ways, including habitat loss and more interestingly through species invasion. Species invasion is the introduction of a species to an environment that had not previously seen that species. This often leads

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to extinction of the naturally occurring species in that environment. International trade, which is becoming increasingly common, is the biggest contributing factor to species invasion (Ricciardi, 2011). The problem of species invasion not only threatens biodiversity, and therefore numerous ecosystem services, but it can also contribute to the spread of disease (Ricciardi, 2011). As well as devastating new habitats, species invasion is also unpredictable, making it tough to combat and prevent (Ricciardi, 2011).

Though there are efforts to reduce individual human ecological footprints, ranging from recycling, composting, use of grey water, etc., there is still more to be done. In order to avoid a total catastrophe, new habits must be formed to drastically reduce waste, and resource use, either by alternative resources or cessation of use. Unless humans step up to the challenge, one of the situations involving deep space travel of thousands of people in order to escape our planet will cease to be an entertaining movie plot and become reality.

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## **IMAGE SOURCES**

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- <http://www.designsnext.com/wp-content/uploads/2013/12/acrylic-paintings-of-trees-768x1024.jpg>

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