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Honors English 112

Harmful Nonnative Species

The subject of harmful nonnative species (more commonly referred to as invasive species) has become a serious and often overlooked problem within the United States. It has only begun to receive serious legislation since the mid 1990's which brought about prime time media coverage of the most infamous of these problems; the snakehead fish in Maryland. Though the havoc they wreak may not be so easily apparent to the average citizen, invasive species affect everyone.

As defined by the 2000 executive order for the National Invasive Species Council, a "harmful invasive species,...With respect to a particular ecosystem in a particular region, [is] any species, including its seeds, eggs, spores or any other biological material capable of propagating that species, that is not native to that ecosystem and has a demonstrable or potentially demonstrable negative environmental or economic impact in that region" (Bartuska 1). These species crowd out plants native to the area they begin to live in, and because these pests have no natural enemies in their new environments, they eventually become an infestation. Some 420 tree pests have been identified, and nearly 500 invasive types of plants are listed by the American Lands Alliance.

Some examples of harmful nonnative species include the tree killing hemlock wooly adelgid and european gypsy moth, leafy spurge, which have all become problems for plants on rangelands, and the mysterious sudden oak death which has killed a significant number of trees since 1995. Some of the more popular invasive species include the pipe clogging zebra mussel, the ever hungry snakehead fish that walks on land, lives almost anywhere, and is unaffected by cold weather, the asian longhorn beetle that has destroyed over 7,000 hardwood trees in Chicago and New York, and, of course, the west nile virus that attacks humans and animals. West nile is "now present in 12 eastern states and the District of Columbia" (Dyckman 5).

An invasive specie can alter water systems, offset soil balance, displace natural animal and plant ecosystems, and disrupt environments in their surrounding areas. They are one of the greatest threats to the nations biodiversity, "second only to habitat loss and degradation" (Dyckman 5). Altogether, they cause more than 137 billion dollars in losses each year. That is more than twice the cost of damage caused by natural disasters in the United States. That figure also includes the loss of one fourth of the nations agricultural gross national product. In time, the cost of damage becomes astronomical. The asian longhorn beetle alone will eventually do more than 600 billion dollars in damage in as little as 30 years.

Invasive pests do not commonly migrate to foreign areas by themselves. In fact, humans transport most all of them. Over half of the invasive species in the United States are purposefully brought here and used by humans for controlling erosion, landscaping, and decoration. Some invasive plants that are commonly found on sale in nurseries or at flower shops include the norway maple, honeysuckle, asian bittersweet, and rosa multiflora. The majority of the other more destructive half travel to the United States in wooden shipping crates, such as the asian longhorn which "first hitched a ride to U.S. ports in 1996 on wooden packing material from China" (Ruvinsky, 1). Others still, travel to the U.S. on nursery imports. One possible solution would be the banning of imports from areas that have the potential to carry invasive tag-alongs, however such an action could be misinterpreted by foreign governments as a suspicious trade barrier. A simpler solution would be a change of packing materials. Many federal and private

agencies make attempts to address the problem of invasive species. Over twenty federal agencies have taken up the fight, including the U.S. Departments of Agriculture, and Commerce, and the Federal Interagency Committee. Private agencies include the American Nursery and Landscape Association, green industry professionals, the Aquatic Nuisance Species Taskforce, the Forest Service, and the University of Minnesota. The Forest Service, which contributes the most to forest pests, spends nearly 15 million dollars every year to combat invasive forest creatures. At the University of Minnesota, researchers are conducting studies on plant diversity, hoping to find ways to decrease the likelihood of invasions by foreign plants.

Of the federal agencies involved, three of the most important include the United States Department of Agriculture (USDA), its Animal and Plant Health Inspection Service (APHIS), and the National Invasive Species Council (NISC). During the 2000 fiscal year, the “USDA spent about 556 million [(“almost 90 percent” of its budget)] on a range of invasive species related activities,” including the combat of harmful nonnative species by funding prevention, surveillance, and controlling the spread of the species. The primary goal of APHIS is the safeguarding of crops and animals; Its jurisdiction covers importation and exportation of harmful nonnative plants, animals, and diseases. It is the agency’s responsibility to prevent these unchecked pests from entering the country, but “APHIS manages to inspect only 2 percent of the more than 14 million shipping containers that now arrive annually at U.S. ports, even though it catches dangerous exotic insects on wood packing material more than 400 times a year” (Ruvinsky 2). The National Invasive Species council was created to lead a coordination effort that would unify the information already in existence about harmful nonnative species. The organization is still very new and is currently appealing to congress for more funds and authority.

Legislation designed to protect against invasive species being brought into the country has been around since 1900. The oldest is the Lacey Act, which outlaws potentially dangerous foreign species from entering the U.S. but makes exceptions for scientific studies. The Lacey Act has been used to ban the snakehead fish and is still used by the Fish and wildlife service, the Bureau of Land Management, the National Park service, and the Bureau of reclamation to ban other species. In 1996, President Clinton signed a law for water management and research of invasive species. In 1998, President Clinton introduced the Plant Protection Act which restricted movement of invasive plants beyond state borders. 1999 brought about the Species Protection and Conservation of the Environment (SPACE) bill which created grants that were issued by the Secretary of the Interior and the NISC with the intent to assist with controlling invasive pests and to funnel eighty-eight million dollars into management programs for harmful species.

Response initiatives and solutions for management require prevention by early detection as the first line of action. Problem areas must be controlled upon discovery and before they grow out of hand. The restoration of damaged ecosystems, and research & development are solutions necessary for gaining a more thorough understanding of the issue. Initiatives must include information management for the sake of efficiency, and public education in order to bring about a solution for the ignorance of the general public. Species that receive the quickest government response are those that threaten crops and livestock profits. Parks and other areas must wait their turn for response teams that are more often privately funded.

Despite current efforts, rapid response requires more improvement. During a congressional hearing in March of 2000, suggestions for the improvement of rapid response were discussed. Solutions suggested were instating aggressive action on prevention, establishing effective early warning systems, enhancing rapid response capabilities, establishing a permanent fund, providing resources to areas of the greatest need, and installing mechanisms to resolve conflicting agency mandates. The idea of creating an online national and possibly global database was discussed by experts in 1998. The lack of such a system is a hindrance to rapid response. Such a system would be of considerable assistance for recording an organism's history,

thereby making it easier to deal with in the future. As of now, gathering knowledge on invasive species is arduous, “because much of this information is buried in disciplinary journals from many different fields...or in obscure government documents and technical reports (‘gray literature’)” (Ricciardi 2). The culmination of all resources involving invasive species into a central online database would result in a system creating coordinated partners and funding, and prioritized responses. It could also provide structured resources and supply specific actions to take in certain situations. Such a system would be a beneficial tool for making important decisions concerning invasive species.

Invasive species have been successfully removed from their non-native environments in several instances. The problem species tamarisk, from the Coachella valley in California was successfully contained and removed, as well as yellow star thistle from Idaho, Oregon and Washington, fire ants from Hawaii, and brazilian pepper from Florida. Still, invasive species are a “condition to be managed,” not just “a one-time problem to be solved” and waved away with legislation (Bartuska 5).

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