

Positive and negative aspects of invasive species introduction

[Environment](#), [Nature](#)



‘ The spatial patterning, structure, and functioning of most of the ecosystems of the world have been altered by the activities of humankind’ (Mooney and Cleland). Essentially, each individual ecosystem holds a fragile place in the world and must maintain a perfect balance with today’s society. People rely on ecosystems to provide them with the primary necessities of life such as food, water, and air. However, invasive species, for instance, can disrupt this ecological balance.

Invasive species are nonnative plants and animals that thrive outside of their natural range and might alter the evolutionary processes of native species through competitive exclusion, predation, or extinction. It is estimated that a total of 50, 000 alien species have been introduced into the United States and, unfortunately, that number continues to rise. As a result, some people argue for stricter regulations of these species to avoid the possibility of unintended damages. Others, on the other hand, indicate that the economies and basic resources of impoverished countries could be improved by the selective importation of nonnative species. Hence, before transferring a hardy but nonindigenous species to another country, businesses and government agencies need to evaluate the grave repercussions of introducing these invaders, if they can be effectively controlled, and the benefits of importing these species to different areas.

“ Intentional and unintentional introductions of invasive species into new environments have had and continue to have profound ecological, human, social, and economic effects at national, regional, and global scales”

(Marbuah et al.). In other words, the natural habitats of indigenous species

have been disturbed due to these biological invasions, and invasive species are a problem to the global ecosystem because they cost enormous amounts of money to control in order to prevent the spread of disease, the alteration of habitats, and the extinction of other animals. In fact, invasive species charge the United States a staggering \$123 billion in damages every year and bring diseases, such as syphilis and acquired immunodeficiency syndrome, to this area as well. Additionally, these invaders often carry new pathogens into new locations, which can initiate multiple ailments, causing a significant threat to the native humans and organisms.

Also, the evolutionary pathways of native species are being altered due to the migration of species among continents. Before the Age of Exploration, “dispersal of organisms across these great biogeographic barriers was a low-probability event; however, today this is routine” (Mooney and Cleland). Transporting species to different zoos among the continents and shipping wood products that contain insects are just a couple of ways they can potentially spread. As a matter of fact, one of the most substantial impacts they have on the environment is extinction, and “ecologists, conservation biologists, and managers widely believe that invasions by non-native species are a leading cause of recent species extinctions” (Gurevitch). They agree that the spread of non-native species has become a global crisis as invasive organisms are increasingly harming terrestrial and aquatic ecosystems worldwide. Therefore, these alien species must be under close watch due to their detrimental characteristics. For example, the cane toad, listed as one of the world’s most unfavorable invasive species, is highly toxic. Moreover, it is

native to Central America and was brought to Australia in 1935 in an attempt to control the cane beetle population in sugar plantations.

Initially, there was no evidence that they killed a single beetle, but, ultimately, “ the toads took over and [continued] to spread at around 34 miles per year” (Spotts). Basically, they had thrived and successfully asserted their dominance in, Australia, the new habitat. Other animals don’t pose a threat because when other animals try to consume them, sacs that run down the cane toad’s sides secrete a poison that takes effect within minutes. In addition, their large appetite depletes resources for other native animals. For instance, these voracious toads are known to munch on almost everything insights such as insects and pet food and have become a hassle to humans. Despite only weighing up to three pounds and measuring up to six inches long, these toads are serious threats to ecosystems in not only Australia, where they extremely abundant, but also in states such as Florida and Texas. Consequently, businesses and government agencies should absolutely consider the pernicious outcomes of introducing invasive species.

Maintaining control is necessary for preventing chaos and yielding success. Without control, all situations would end up in total havoc. In other words, whether invasive species are introduced intentionally or accidentally into new surroundings, they must be controlled before they have catastrophic effects on numerous people and places. For example, “ during the SARS outbreak of 2003, a total of 8098 people worldwide became sick...[and] of these, 774 died” (Dybas). Since SARS, a viral respiratory illness caused so many deaths, public health officials had to take extreme measures to control

the outbreak of this infectious disease. However, their efforts of halting the importation of civets fell short, as the virus, nevertheless, spread in unprecedented numbers by means of planes, trains, and automobiles. Not only can invasive species induce illnesses and deaths, but it may also affect a nation's food supply. In fact, crop-killing microbes worry farmers all over the world such as papaya growers, Jenny and Delan Perry. They saw evidence of a papaya ringspot virus invading their fields, which had erupted into a full-blown epidemic. Within a few years, their “ papaya industry had nearly vanished and so had their livelihood” (Devine). Even though the conditions were ideal for developing their papaya, the virus had wiped out the Perrys' entire 70-acre farm. Evidently, invasive species are major threats to agriculture. Therefore, if not properly managed, nonnative species can have several implications on the world.

In addition to assessing the adverse effects of invasive species, businesses and government agencies need to evaluate the benefits. With the aid of these species in a controlled environment, the economy can quickly enhance. Since the human population has surpassed 8 billion people, “ expectations for aquaculture to increase its contribution to the world's production of aquatic food are very high” (Hewitt et al.). In fact, farming oceans, some of the fastest-growing forms of food production in the world, offer opportunities to alleviate poverty, increase employment, and develop food security, specifically in developing countries. On the other hand, nonnative species can produce grains like quinoa. For millions, quinoa “ is a major source of protein, and its protein is of such high quality that,

nutritionally speaking, it often takes the place of meat in [diets]" (National Research Council Report). Hence, this grain seems particularly promising for improving life and health in marginal upland areas such as in parts of Ethiopia and Southeast Asia. However, even though invasive species can be rewarding, the irreversible damages still predominate. The most significant of these is the widespread loss of habitats. For instance, balsam woolly adelgids, insects accidentally imported to the United States from Europe, annihilated a plethora of balsam fir trees. Now, as a result, native species who rely on these trees may face extinction. Thus, the photograph portrays a barren forest that infuses a sense of sadness and loss. In addition, it signifies the destruction nonnative species can cause if government agencies simply ignore the potential risks. Furthermore, the dangers of these species are extremely abundant and outweigh the positive effects.

Now that rapid transportation has been recently more accessible between the continents, the rate of invasive species has increased dramatically. However, even though nonindigenous species affect countless lives, the severity of them goes widely unnoticed. Consequently, since ecosystems play such a crucial role in the lives of all species including humans, businesses, and government agencies must prioritize the environment, the economy, and public safety before transferring invasive species to another country. Otherwise, if the risks are disregarded, then these species may spread fatal diseases, obliterate native plants and animals' habitats, decrease agriculture productivity, and even cause serious harm to society.