

Invaders threaten ecosystem

Over millennia, the makeup of species within an ecosystem reaches a balance. Whether it's rabbits in Australia, zebra mussels in the Great Lakes, or freshwater shrimp in British Columbia, one of the greatest threats to this balance and diversity of life on earth is from foreign plants, insects and other animals that are introduced to new areas.

The spread of introduced or invasive species has been one of many damaging environmental side-effects of the push towards a globalized economy. As worldwide trade has increased, species have been given free rides to virtually every corner of the planet, and that's meant big trouble to indigenous creatures, some of which have been pushed to the brink of extinction by invaders.

Invasive species reach foreign ecosystems in a variety of ways. The ballast water of freighters, for example, is a virtual aquarium of exotic species and its routinely dumped in the harbours of port cities. Grain, lumber, fruit and millions of other goods are shipped around the world every day. These can carry insects, small mammals, plant spores or other organisms that are then released into new areas. Combined with an explosion of global travel, it's easy to see how species can move from place to place.

Usually imported species, having evolved elsewhere, are unable to gain a foothold in their new habitats and eventually die out. However,



humans have altered the planet so much that naturally occurring species are often weakened so that invaders can more readily take hold. What's more, as our climate changes, new regions become habitable for species that were previously limited by temperature or precipitation levels.

Today the United States alone spends more than \$500 million annually on combating invasive species. These are estimated to be costing the country billions in lost crops and damage to infrastructure, not to mention adding to the loss of indigenous species and their habitats. Worldwide, the problem has become so large that there is now an entire scientific journal devoted to the subject.

Not all invasive species are introduced by accident. Sometimes they are released intentionally, which can have disastrous consequences. In British Columbia, for example, the introduction of a tiny freshwater shrimp as a food source to help boost fish populations in lakes had exactly the opposite effect. The fast-reproducing shrimp ended up out-competing native Kokanee (a freshwater salmon) and trout for food. In just 30 years, Kokanee numbers have dropped 99 per cent.

An introduction of mosquito fish- one of the oldest methods of biological control - has also had unintended side effects. These fish were released in areas of Canada, the U.S., New Zealand and Australia to reduce mosquito populations. Unfortunately, studies from some areas show that the fish actually prefer tadpoles to mosquito larvae. Some researchers suggest that mosquito fish may be linked to declining amphibian populations in California.

Given the known impact of invasive species, the tens of thousands of Atlantic salmon that continue to escape from open cage fish farms along the B.C. coast should be a big concern, especially considering the weakened state of wild stocks.

Every species on this planet has a role to play in the functioning of the biosphere as a whole. When introduced species run rampant and displace indigenous species, the result is a loss of biodiversity. In turn, this reduces the capacity of the earth to fulfil the biological cycles that maintain all life. Ecologists are concerned that the spread of invasives could result in a few successful species dominating the planet, resulting in what some have dubbed a global McEcosystem.

As economic powers push towards greater globalization, greatly increased diligence to prevent invasive species from spreading is required. A biologically poor McEarth would be an unhealthy and lonely place to live.



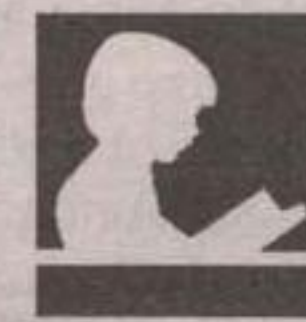
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