Genetic engineering and conservation

Literature, Russian Literature

Genetic Engineering and Conservation

Abstract

Genetic engineering is a revolutionary technology that lets man play God. The genomic tool is very much prevalent in the agriculture sector with the development of genetically modified food and crops; however, there is considerable question whether or not this tool should be used for issues regarding conservation of biodiversity. With the increasing population and other anthropogenic activities mankind poses as a threat to many species that thrive today; however the existence of these species tomorrow is a big question. Scientists have come up with the idea of trying to protect extinction of these animal species with the help of genetic engineering where genetic modification would not only help animal species adapt better to the changing environment but resurrection of some extinct species is also under consideration.

(key words: genetic engineering, biodiversity, extinction, conservation, species)

Today, most species face stress factors ranging from global warming, habitat destruction to conflicts and poaching leading to great reduction in numbers of some species. Conservationists are seeking the help of modern science for designing interventions to control these losses.

Genetic engineering is the science of altering ones gene by introduction of a foreign gene for beneficial purposes such as adaptation. Genetic engineering has already contributed to the growth of the agricultural sector making the Genetically modified seed sector alone worth $ 15 million (Thomas et al, 2013). However, genetic engineering is not considered a modern strategy

since it was used even decades back to make plants more tolerant to certain conditions such as temperature and pest attack, thereby making genetic tool a reliable tool.

Genetic engineering could be used to introduce lost genetic diversity among a threatened population to enable stabilization. For example, in Florida the population of Florida Panther increase by 100% after members of another closely related species-Puma concolor stanleyana was introduced which worked by decreasing inbreeding (Thomas. et al, 2013). Genetic engineering would play an important part in refining this methodology.

Another way in which genetic engineering could aid conservation is by recognizing certain beneficial genes and introducing them into vulnerable species. Aquaculture researchers recognized an allele in rainbow trout (Oncorhynchus mykiss) that made them withstand high heat. These genes could be introduced through modern tools into the genomes of fish eggs to make them more tolerant to changing conditions.

However there are growing concerns about the placement of genes since the results of interaction between altered genes and the environmental condition are unpredictable. There is concern regarding the viability of the genes and the ways in which the introduced gene would have on the species as a whole as well as on the ecosystem. However some people also hold the view that once this technology is adapted mankind’s concern over global warming would reduce as well since man would find a way to adapt to the changing condition but not a solution for the cause of change.

The science also has some ethical problems since some believe it is highly unethical to change the animal themselves than change the adverse

conditions (Rollin, 2014). Another growing concern is that the process requires gene which is has to be procured from other animals which means sacrificing the animals for the sake of conservation (Ormandy et al, 2011, p544).

Personally I feel that the tool is the answer to many of the questions that lie in front of us today and we must utilize the applications of the science wisely.

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