Impact of the Saltcedar

in the Southwest

New Mexico

Supercomputing Challenge

Final Report

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Team 98

Picacho Middle School

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Project Summary:

We did research on the saltcedar and found out where it came from and why it's so bad. Then once we found out why it was terrible we researched ways to get rid of it. Then we chose that the best method was to use goats because some pesticides can hurt other plants. Also if the animals (like coyotes, snakes, etc.) digest the poison it can hurt or possibly kill them. So we made a program to show that our idea could work.

Problem Definition:

A saltcedar is a shrub plant that is hurting the survival of other plants and animals. What the problem is, is that we can`t control them. Also it absorbs all the water and animals and plants need water. How do we control the saltcedar?

Problem Solution:

We propose that goats are used to eat the saltcedar therefore no more saltcedars will drink up the water. We came up with this idea when we looked on the internet and found how to get rid of them. In the website "Tamarix" it says goats like saltcedar mixed with other grasses.

Description of Method:

First, using the StarLogo program, we created 5 goats and 10 saltcedars and we made them scatter. The saltcedars' size was put to random 10. Then we gave every agent a set energy of 1. The saltcedar had energy so we gave them the procedure to grow. As they gained energy they grew.

We made the goats find the saltcedar by smelling them. The radius they could smell was 5 if they were hungry. The program said that when the goats have energy less than 5 they are hungry.

After the goats are full the saltcedars will grow. The saltcedar will grow their size when their energy increases.

When the goats and saltcedar come together the goats increase energy from eating the saltcedar by a random energy up to two. What happens to the saltcedar is that the saltcedar loses energy by a random number up to three.

In conclusion the program shows that after a long period of time, the goats do eat all the saltcedar.

Research:

Our group looked on the internet and went to different websites to find different ways to control the saltcedar. On the first website we found many things like that the real saltcedar name is Tamarisk but saltcedar is its common name. The saltcedar life span is

perennial which means it can live forever. The saltcedar grows well in most sand.

Results:

The result is that the goats will smell the saltcedar and then they will eat them. The saltcedar grows back but overtime the saltcedar will be exterminated.

References:

The 5 websites we used are:

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