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Fall 2021

## **Integrative Solutions to a Common Problem**

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Integrative Solution to a Common Problem

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**Abstract**

This project was about eliminating a potentially dangerous and costly problem in my neighborhood. Rodent infestation had destroyed my yard as well those of two close neighbors. Holes and tunnels were hazards to us and our animals, while also damaging our sprinkler systems and being aesthetically displeasing. The project utilized new research and traditional methods to provide an ethical preventative and eradicated method of rodent removal. The stakeholders' attitudes regarding their property, safety, and pest itself, were all considered to come up with the best solution possible for our situation. No rodent was caught but mitigation of any future problems, including sprays, repairs, and planting, were all used effectively to this end.

*Keywords:* Ethical, Rodent, Safety

## Integrative Solution to a Common Problem

### **Introduction**

My capstone project sought to utilize different solutions for a community problem. For the past several years my neighborhood has been plagued by pests. Tunnels would be dug around our yards causing damage to my yard and the yards of my neighbors. Beginning in May of 2021 the intensity of burrowing was magnified, yet none of us had acted. The pest was a rodent of some type. The rodents burrowing in our yards had caused damage to plants, sprinklers, and the surrounding soil via digging. Combining traditional solutions with newer research to capture, release, and prevent future damage became my goal. I was able to gather and record the concerns of my neighbors about the pest and capstone project itself. I also took the opportunity to hear any solutions they had to offer. Our plan simplified was to capture, relocate, fix, and prevent. I will expand on the complexities of each of these throughout the paper. Ironically, the rodent problem ended up solving itself, for the time being. Fixing and mitigating the return of the rodents became the focus and was achieved successfully.

### **Innovative Approach**

The problem in the beginning was the removal of a pest or pests. The traditional methods were well known, these included trapping and poisoning to eliminate the pest. From past years, myself and the stakeholders knew this would not prevent the problem from returning. On the other side, a holistic approach was considered. Doing research and reaching out to an ethical pest removal company helped create new ideas. The non-traditional way of solving this problem involved changing the environment of our yards to make the rodent leave of its own will. While markedly more difficult and with no guarantee of success, this solution seemed to offer a way to

prevent the return of the pest. I had two ways of going about this now, what I called the traditional and the ethical way of removal. Utilizing both methods would accomplish my goal in the given timeframe while keeping an ethical stance and (hopefully) preventing the problem next summer. Considering how my stakeholders wanted to approach the problem, we ended up using both the traditional and ethical methods, with a combination of both on my yard.

### **Emotional Intelligence**

The stakeholders primarily consisted of my immediate neighbors who I would be working with, and the neighborhood at large; roughly three streets running parallel to each other. Given the small size of our neighborhood I was careful to consider any consequences the methods would have. I wanted to solve the problem for my own wellbeing and was determined to do it ethically, without harm to any creature. I extended this sentiment to my neighbors, and thus the ethical solution was proposed as a primary preventive and eradication method. All my stakeholders sympathized with this approach to the problem, it was also known that I was working on other solutions. One neighbor was adamant that trapping, or poisoning was the only solution. I considered his advice and eventually we did end up utilizing a trap for him.

Considering the emotional intelligence of others had me being cautious about any method I used. I was particularly worried about cats or other animals being trapped or harmed and so listed poison as off the table. Early on the project became about how to do this as ethically as possible and this is where real emotional intelligence and value lie. If this problem is happening to others, I believe trying what I did first is the best solution. Albeit in severe cases of pest infestation this kind of method will not work.

### **Creative Thinking**

After hearing from my stakeholders about what they would like to see from the project, we utilized almost all methods. A specific framework was created for each neighbor. For neighbor A we decided it was best to set a trap in his backyard, as this is what he wanted. If we caught the pest, a relocation was planned. At this point we were positive we were dealing with one or two rodents, so knew this was manageable. For neighbors B and myself, we decided to change the landscape of our yards to move the rodents away and prevent their return. This method seems to have been the most successful. The approach was unique as it gave me a way to compare both methods against each other to see what would work best. The research I had read gave me some ideas, but as far as I know the method I ended up using is unique to our problem.

### **Your Innovative Solution**

For neighbor B and myself, the ethical method required filling in the holes and tunnels that had been dug in each yard. After the fill, it was apparent there were areas that were particularly popular with the rodent. Underneath an apple tree in my yard, and the corner near the street for neighbor B. One method I researched involved a spray using chrysanthemum flowers. This organic spray wards off rodents and insects and was not harmful to the environment or other animals. The apple tree was also sprayed with a mixture that deters the production of apples, this will mitigate the problem next year, as I was told this was why the spot was so popular. Preventing the rodents from coming back at all being the most effective method. In one corner of neighbor B's yard that was unrepairable, we replaced the grass with gravel and planted several bushes and a sapling. This method is to establish a root system that helps in the prevention of tunnels. A combination of root systems and sprays in popular areas makes the area undesirable for the pest at hand. For neighbor A we set up a trap using bait but were never successful in

catching the rodent. I was also unsuccessful in capturing anything in my yard. We filled in the holes and planted grass seed in both mine and each neighbor's yard, while also fixing a several sprinkler heads that had been damaged in the process.

If I could approach the problem differently, I would attempt this project earlier in the season. Our lack of success in trapping anything is attributable to either seasonal changes or our preventative methods working to drive the rodents out. I believe it was the cold weather that was responsible for the lack of rodent interference, but according to research, continual spraying and more planted shrubbery will keep them from returning. I also believe there are other methods I can come up with if they do return, a lack of time prevented this, however.

My solution to the pest problem in our neighborhood is more innovative than anything else offered. All that is done by traditional pest control is trapping and killing. I wanted to find another way to make sure we did not have to deal with our yards being destroyed each year. It remains to be seen however what effect my methods will have. The stakeholders all seem very pleased, as we did sufficient work together to repair our yards. The landscaping done is also an aesthetic bonus that was done cheaply and well. I'd also like to note that while the rodent disappeared from our yards, I was careful to make sure he had not migrated to another neighbor's yard. As far as I can tell this was not the case.

### **Results**

The benefit for myself and each stakeholder is the absence of rodents, holes, and tunnels, in our yards. Our yards were ravaged and looked horrible by all accounts. The neighborhood at large, while not a part of a H.O.A., benefits from not having torn up yards bring down property values. The stakeholders were pleased with the planting of shrubbery and a tree as it looks great and is not possible to dig under, as well as the filling in of all holes, a potential hazard that

caused my own dog to trip and require surgery earlier in the year. We all have more peace of mind about the safety of our yards. The debilitation associated with waking up and finding large mounds of dirt and tunnels thrown about has subsided, and we patiently await to see if they will return. I was also satisfied with the spray we used as it is an ethical solution that seems to have great results for others. Throughout the project I worked with my neighbors to see how they felt and what they wanted most out of the work done. We are all very friendly, so everyone was open to trying all solutions to fix our problem. My communication with them on a shared issue was new to me however, and I was proud to have worked with them on something for all of us to enjoy.

### **Different Approaches**

I believe if I had focused more on trapping, we would have had a more tangible result. As it stands now, my best guess is that we were dealing with a mole or vole, at the very least some type of rodent. I went the preventative route because it did seem like the more integrative approach and would solve the problem long term. I did not expect the result of the rodent disappearing as soon as it did. There are three explanations I can see; the cold forced the rodent away, our methods worked to drive him out of all yards, or he simply left. The cold was not as big of a factor when we stopped noticing tunnels, so I do believe our filling in and spraying of tunnels and holes played a large role. It does leave open the question as to why he stopped inhabiting neighbor A's yard, however. So, while the results were not completely unexpected, they also were not entirely clear either. Ideally, if we had caught the culprit a method of relocation was planned that I had done research on but never got to utilize.

### **Conclusion**

I learned that setting up a solution like this and working together with my community is easier than I had initially thought. Our collaboration benefited all of us and the neighborhood at large. Calling a pest removal service could have solved the problem, but not prevented its return and that became my main goal and is the benefit provided to all of us. I was also concerned with the morality behind such a thing, as killing the animal is solution offered by nearly all pest removal companies. The skills I acquired were how to effectively organize, collaborate, and execute a plan like this. I also learned how to organize my thoughts and my neighbors' thoughts using surveys and other forms of media. In the end this project is repeatable and will probably involve more tweaks to achieve the required goal if it has not already been achieved. We will have to wait and see at this point if the problem returns.

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