CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY

Name(s)

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Project Number

J0902

Project Title

What Goes Up Must Come Down: Tracking Airplane Pollution on the Coastside

Abstract

Objectives/Goals

Airline traffic is one of the top ten industrial air polluters in urban areas. Airplanes are constantly flying over my community, located not four miles down the road from the local Moss Beach airport in Northern California. I designed my project to discover if houses that are situated along the airport flight path are more susceptible to air pollution, in the form of particulate matter, than those houses outside the flight path.

Methods/Materials

I used twenty residences as pollution monitor sites. Ten were situated inside the flight path and ten were outside. On three separate occasions I collected air samples, each testing for a 48-hour time span. I set up the experiment using 3 x 5 index cards with graph paper on them that served to separate the particles into sections. I smeared each card with petroleum jelly to capture the air particles and placed these on fences, decks, and roofs at each site. Using a microscope, I analyzed the cards after each experiment, resulting in an average number of particles at each test site.

Results

Houses that lie inside the flight path have 38% more air pollution than those houses that lie outside the flight path. On average, the houses inside the flight path collected 126.10 pollution particles per square inch, and houses outside the flight path collected 91.47 particles per square inch.

Conclusions/Discussion

It is clear that the Moss Beach airport does not only impact our community with distracting noise but with significant levels of air pollution as well. This study reveals that geographical proximity to an airport is not the only factor to consider in evaluating the impact of air pollution on a residence. Those residences situated in a flight path are more exposed to air pollution than those residences that lie outside the flight path.

Summary Statement

The impact of air pollution derived from airplanes on residences both inside and outside of an airport's flight path

Help Received

No help