

Case study: superfunds

Business



What are the benefits of comparing contaminant concentrations and biological impacts in Tidal Bay sediments with those of a reference area? Benefits of comparing contaminant concentrations and biological impacts in Tidal Bay sediments with those of a reference area include seeing to what degree and level of toxicity Tidal Bay is given the reference area. In other words, the reference area provides a basis point for the measurements of Tidal Bay. 2.

What are some of the limitations (problems) associated with the use of a reference area and with the choice of Shipshape Inlet as this area? One limitation associated with the use of a reference area and with the choice of Shipshape Inlet as this area is that both could be contaminated, yielding a slightly skewed interpretation of the results. Additionally, the reference site may contain other factors that the actual site lacks, which can skew results.

In fact, the reference site could be more contaminated than originally perceived, also changing the results. 3. Can you think of another approach that would work?

Another way to test contamination would be to test the aquatic life in the area, which they do later in the case study. Additionally, one could test the water before and after the industrialization of the river, but that would be impossible to do now that the industrialization has already taken place. 4.

What impact do you think the presence of multiple types of hazardous waste will have on the ability of investigators to establish a cause-and-effect relationship between specific chemicals and adverse (negative) biological

changes in Tidal Bay? A number of measurements were used to quantify contaminant impact on the ecosystem.

These include several biogas species, benthic community composition, accumulation, and fish histology's. The problem with too many types of hazardous wastes and too many aspects of the environment was that there are too many variables to determine each one's direct effect. . Do you feel these measurements are relevant to this aquatic ecosystem? These measurements are relevant to this aquatic ecosystem because they measure the ecosystem's health through the health of its organisms. 5.

Are these measurements likely to give the kind of data required to fulfill the purpose of the assessment?

If not, how would you change the approach? I believe that these measurements are likely to give the kind of data required to fulfill the purpose of the assessment because they clearly measure the contamination in the ecosystem's environment. The sediments of the environment itself seems like an obvious representation of the ecosystem as a whole because it serves as the base for the entire system. 7. Investigators characterized degradation of benthic macro-invertebrate communities in terms of a decrease in the abundance of total amphibia, mollusks, polyphosphates, or total microfarad.

However, many conditions can influence the overall abundance of benthic macro-invertebrates including an algae bloom that depletes oxygen in the water.

Did the investigators consider all factors that could have altered macro-invertebrate numbers? The investigators didn't consider all factors because there are external factors that can cause the decrease in organism numbers as well. Perhaps natural disasters that couldn't be expected may have a permanent or temporary effect on the ecosystem as a whole. Factors such as a storm or a temporary human interference could have been the cause of species degradation. . Could apparent effects thresholds be determined for fasciculation and eschatology in fish? Why do you suppose investigators did not do this? The apparent effects thresholds could be determined for fasciculation and histology's in fish but it would be a much harder and unreliable process. Fish swim all over the place, picking up or rinsing off contaminants along the way, perhaps not immediately showing effects of surrounding pollution as quickly as something unable to swim away from it for various amounts of time.

Also, fish may not respond as immediately to the contamination. Since the fish are freer to move around, it would be impossible to reach a precise conclusion as to the specific cause ND effect relationships to a particular area with a sample that can migrate to other areas. 3. What are some major strengths of the apparent effects thresholds and what are some limitations? Some strengths of the apparent effects thresholds is that they were able to extract selective factors and use them to create standardized data with baselines.

For example, they were able to tell exactly how a species reacted to a certain environment and then use this knowledge to test the environment they were placed into. Yet some limitations are that such data can't actually <https://assignbuster.com/case-study-superfunds/>

be used as the only method in proving a certain cause and effect relationship, since external factors may be involved which also affect the ecosystem.

10. Name one point you learned that you feel is most interesting. One thing I learned was how many factors must go into finding a cause and effect relationship and then proving it beyond a reasonable doubt.

There are so many variables included in actual sites like these that it takes many tests, hundreds of data entries, and a list of all possible factors to even come close to having enough evidence to prove something. Additionally, after all these are completed, there still may not be enough to finally state the cause and effect relationship. ' Our estimates suggest that Superfund clean-ups reduce the incidence of congenital anomalies (birth defects) by roughly 20-25%.

The finding of health benefits does not necessarily imply that it is in the public interest to continue the Superfund program in its current form.

It might be more cost effective, for example, simply to ensure that people do not live near contaminated sites. Further research is clearly needed to determine whether the program is cost effective in improving health outcomes relative to possible alternative use of federal resources. One appeal of infant health as an outcome is that it avoids the problem of a lack of information on the countless other environmental factors that may affect adult health, including, lifetime smoking behavior, lifetime exposure to ambient air pollution, and lifetime exposure to multiple hazardous waste sites.

A limitation of our analysis is that it cannot be informative about long run outcomes, like cancer.

Further, there is no standard measure of the willingness to pay to avoid a congenital anomaly so it is difficult to develop a monetary benefit of these clean-ups. " [" birth defects" added] Currie, J. Gravestone, M. , & Importer, E. (2011). Superfine cleanups and infant health (No.

w16844). National Bureau of Economic Research. ' This article offers the first comprehensive assessment of the cost-effectiveness of these Superfine clean-ups.

Our results reveal that many EPA Superfine remediation fail a partial benefit-cost test. For a sample of the 150 Superfine sites, we find that at the majority of sites the expected number of cancers averted by remediation is less than 0.

1 cases per site and that the cost per cancer case averted is over \$100 million. The analysis demonstrates the importance of explicitly lactating the trade-offs embodied in environmental clean-up decisions" Site, S. 11999). How Costly Is" Clean"? Journal of Policy Analysis and Management, 18(1), 2-27. This article analyses the equity implications to the Pea's Supported program by examining the geographic distribution of sites, who pays for clean-up, and clean-up pace. Although the " polluter pays" principle is used to justify Superfine policy, it is a goal that is not? and indeed usually cannot? be attained for past contamination.

Further, the geographic distribution of Superfine sites suggests that the likely infirmaries of program expenditures live in counties that are on average both Unhealthier and more highly educated than the rest, and also have lower rates of poverty.