

Nuclear Explosions, GIS and Utilizing an Interdisciplinary Approach to Understanding Environmental Impacts

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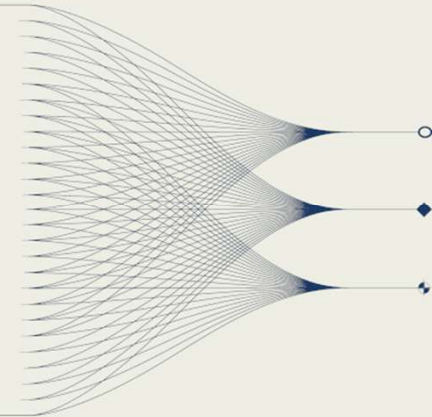
..... INTRODUCTION AND MAIN RESULTS

Geographic Information Science (GIS) offers a critical and nuanced way to analyze both the environmental and social impacts of nuclear weapons.

By visualizing the extent of risks, we may be able to better understand the inequitable distribution of impacts that nuclear testing has historically placed on certain communities. Understanding this burden requires an intersectional and nuanced lens.

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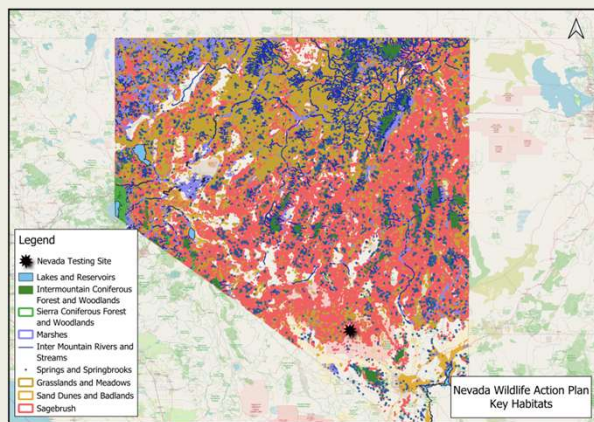
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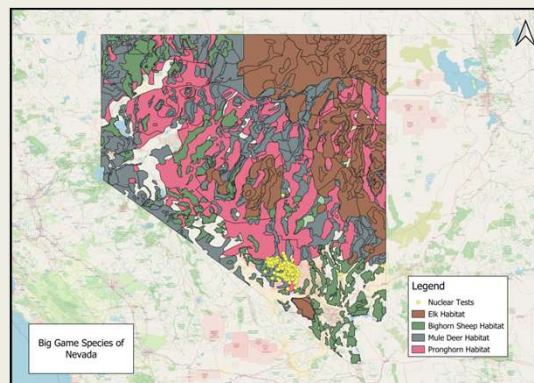
Mapping Risks & Impacts

The impacts of nuclear testing are complex, varied and inequitably distributed. Using Geographic Information Systems (GIS) to visually represent the surrounding environment of testing areas provides a way to further understand the risks and impacts by conceptualizing the extent, severity and longevity of testing.

Ecological data may be mapped to include vital habitats, at-risk species, levels of biodiversity or recovery rates, as examples. Sociocultural data may be mapped to include ancestral territories, habitat destruction, health risks and impacts, or types of accessibility. Geospatial data offers a way to visualize and contextualize the intersection of multiple risks and impacts.



Geospatial Data



Mapping the spatial distribution of impacts requires geographic and quantitative data. Currently, eligible data on the studied impacts of nuclear testing are lacking, though this provides a valuable opportunity to collect and convert existing data.

Existing data + research may be able to be represented geospatially if attributed geographic data exists. Social data such as census statistics, population density, public health data, Indigenous territories and other sociocultural variables provide context and encourage an intersectional understanding of nuclear testing.

Prioritizing the collection of geospatial data and research on environmental and human impacts would allow for boundless future GIS opportunities and vital material for education and outreach campaigns.

Outreach

GIS offers an opportunity to reach the public in a uniquely visual and provoking way. Outreach campaigns could visualize the blast radius customized to a specific region or city, the distribution of health impacts of nuclear fallout or ecological recovery timeframes.

Using GIS to map a variety of impacts and risks offers the ability to reach the public through personalized maps, campaigns or applications. Specific areas of interest may be targeted through a variety of datasets.

The use of geospatial data provides an opportunity to increase public awareness and to encourage greater support of the CTBT by offering a way to conceptualize the reality of nuclear testing. Mapping multiple variables is essential to understanding the intersectionality and complexity of impacts.

