



Lynetta K Campbell Consulting

Specializing in Statistical Analysis for Scientific Applications

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Mr. Tim Robertson
Nuka Research and Planning Group, LLC
P.O. Box 175
Seldovia, AK 99663

Dear Tim,

Per your request I have analyzed the environmental data collected from four weather buoys and three airports that was assembled for the Aleutian Islands Risk Assessment project. My analysis focused on answering the question of whether or not the buoys and the airports were reporting on equivalent weather populations. If it was found that they were, it was hoped that missing data from one source could be replaced using data from another.

The methodology that I employed focused on short intervals of time for which data was available from all sources. To answer the questions about equivalence, I presented summary statistics for each of the buoys, reduced the number of variables under consideration through principal component analysis and used these new variables in a graphical exploration, and then ultimately ran Manova regression and Box's M test on the original variables to test the hypotheses of equal mean vectors and equal variance-covariance structures respectively. All of the methods consistently indicated that the weather populations from the various collection points were not equivalent.

The work is presented in detail in the attached report. After reviewing it, please let me know if you have any questions.

Thank you for the opportunity to work on this.

Kindest regards,
Lynetta Campbell, M.S., M.S.
Statistician