

of the control points can be employed as another technique. An assumption may be made as to the variation in the scale in the X or Y direction of the Herrman map. Thus, an inconsistent or variable distortion may exist, which can be rectified by the determination of the scale by analysis of the distribution of the control points.

Therefore, other methodologies must be explored to obtain a less subjective analysis of this cartographic evaluation. In digital form, the scale of the Herrman map can be changed to distort for an electronically best-fit of the map. Goodness-of-fit statistics can also be obtained. Moreover, reconstruction of the Herrman map can be performed based upon the results of the goodness-of-fit analysis. This reconstruction essentially distorts locally the digital data within grid cells to coincide with the established 'standard' or accurate map (NOS shoreline). Redrawn maps of the newly distorted map can then be produced to show how the Herrman map in its modified form, adjusted grid, and correspondingly shifted data will appear.

For the computer analysis of the Herrman map, three digital files were created; the Herrman map, the NOS charts, and the third file created by the transformation of the first file 'corrected' to the standard second file