Abstract:
Goodnews Bay region is located in Southwestern Alaska, north of the Aleutian chain and south of Yukon-Kuskokwim Delta. The study area is North of 58°51.736, East of 162°09.340, South of 59°05.892 and West of 161°49.142. The U.S Geological Survey has estimated the coastal platinum placer resource potential at Goodnews Bay region to be 5 Million troy oz. (155517.38kg), based largely on geologic inference. Platinum is a noble metal and has several industrial uses.

This work presents the design of a GIS database for compiling, integrating, analyzing and visualizing the existing and new datasets for the Goodnews Bay region. The existing dataset includes marine geochemical data, geology of the area, bathymetry of the region, modes of placer transport to offshore and near shore locations, the extent of drowned ultramafic rocks, geophysical surveys carried out in the region, comparison of paleoshore line 8000yrs ago to the present and a satellite image showing sediment density distribution. Database structure is an open database which would incorporate the new datasets of geochemical, magnetic and field photographs to be collected during the summer 2005 cruise.

For analysis, the geochemical point datasets collected by USGS and other individual researchers were combined and rasterized using kriging. Platinum values for unknown points were obtained by interpolation and extrapolation. The distribution pattern of platinum concentrates is presented. A bathymetric map showing submerged ridges in the offshore region is shown. A study of the correlation between platinum distribution and bathymetry is underway. All input data and results will be posted online at a dedicated website on the UAF server.