TECTONIC MAP OF THE WESTERN PORTION, NORTH ANATOLIAN FAULT SYSTEM

Alvis L. Lisenbee (alivs.lisenbee@sdsmt.edu) and Nuri Uzunlar (nuri.uzunlar@sdsmt.edu), Department of Geology and Geological Engineering, South Dakota School of Mines and Technology, 501 E. St. Joseph St., Rapid City, SD, 57701

Tectonic maps are regional compilation showing locations, geometries, and types of faults, folds and unconformities, the distribution of lithotectonic packages formed in varying depositional/tectonic regimes, and the thicknesses of strata formed in depositional basins. Ages of such features may be shown through the use of patterns or colors: In the region of the North Anatolian fault system (NAFS) earthquake epicenters will be included as well.

From approximately Bolu westward to the Aegean Sea and southward from the Black Sea to approximately the latitude of Eskisehir the NAFS is distributed across a broad zone, although the strongest deformation is centered upon the Sea of Marmara. A tectonic map of this region will define this great fault system at its uppermost crustal level showing the locations and patterns of currently active faults, which possibly link to earthquake foci at depth, as well as the locations of older, currently inactive faults and help to outline the structural evolution through time. It will show map patterns revealing the interaction of fault strands and the locations of confining and releasing bends, basins and uplifted blocks, etc. In addition, such a compilation would likely identify areas of probable structural significance meriting further field definition. The examination would commence with a pilot study of the region westward from Bursa and south of the Sea of Marmara.

The proposed tectonic map would be compiled from existing data sources at map scales of approximately 1:200,000 and synthesized to scales of 1:500,000 to 1:1,000,000. Such sources would include: 1) literature in journals and from Turkish entities such as the Mining Technology and Research Institute (MTA); 2) M.Sc. and Ph.D. theses from Turkish and international universities; 3) non-published maps and reports from Turkish entities e.g., the Turkish National Petroleum Corp. (TPAO), the National Water Works (DSI), the Disaster Defense Agency (DDA), etc.; 4) examination of remotely sensed data and: 5) field examination of selected areas. It is hoped that preliminary stages of the map could be reviewed by colleagues at Turkish institutions who are active researchers in the region.