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Inventory Survey of Geodiversity Elements in a Regional Territory: Applied to the Biga Peninsula, Northwestern Turkey

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Representative geodiversity elements such as minerals, rocks, fossils, landforms, etc are key components in order to obtain data for the pursuit of geo-research. The scientific worth of geodiversity is not only related to how the geosphere works but also is connected with the conservation of earth materials for present and future geo-knowledge and geoscience milieu. Hence, the nonrenewable nature of geodiversity elements in the human time scale is taken into account for the conservation of natural diversity or simply geo-conservation. Geodiversity as an abiotic element ascribes to in situ or ex situ features both of which maintain scientific value and are used by various societies such as in teaching, tourism, etc. Ex situ elements are known as fossils, minerals and rocks found in museum collections on the other hand in situ features are known as geosites for which there are certain sub-categories such as geomorphological (landform), hydrogeological, paleontological, structural, stratigraphic sequence and lithological. Due to the plethora of geological data dispersed among geodiversity elements, the first crucial step is to execute an inventory solid study.

The scope of this study is to survey geodiversity features of potential natural sites distributed the entire sectors of the Biga Peninsula of Northwestern Turkey. In the territory, there are 37 natural sites with their own data set. This data describing their boundaries and administrative features were acquired from Directorate General for Preservation of Natural Heritage. Then, site boundaries, regional published geological maps, surface hydrologic and anthropic attributes were overlaid conceiving as a single unit. Before initiating the inventory survey, the criteria scale were established for geoscience value and geo-tourism potential. In these two frames, geodiversity elements were labeled and tabulated by their representativeness, integrity, rarity, scientific knowledge, scenery, interpretative potential and accessibility to classify aforementioned natural sites. Our initial results show that western (the coast of Dalyan), southern west (Tuzla Geothermal Field) and northern (Çardak Lagoon) coasts are thought to be identify as a potential geosites and promising areas for geo-tourism as well. In general terms, potential geosites in coastal regions are recognized primarily by their geomorphological features whereas inland geosites are designated by their lithological and structural features.