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Invited feature

Coastal zone – Terra (and aqua) incognita – Integrated Coastal Zone Management in the Black Sea

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ABSTRACT

In the Black Sea coastal states (Bulgaria, Georgia, Romania, Russian Federation, Turkey, and Ukraine), Integrated Coastal Zone Management (ICZM) has no properly established legal and institutional framework. The term “coastal zone” is undefined in national (reportedly with the exception of Bulgaria) and regional legislative documents. The interface between science and policy within ICZM remains poorly developed. Policies for streamlining efforts have been ill-managed and decisions taken in functional zoning and the balanced use and protection of coastal zones have often been shown to be incorrect. The observed proliferation of consultative committees and councils has not been much helpful, public participation has been widely neglected. Illegal practices are in place, and coastal developments continue being largely unsustainable. These problems are often explained by the low awareness of ICZM benefits, and hence, a shortage of political good will, but also by the lack of appropriate Black Sea scientific research, which would ensure a fundamental knowledge-base. There are hundreds of organizations involved in collection of data and information of relevance for ICZM, although there is a distinct lack of coordination. Consequently, there is a substantial overlap of activities, whilst important scientific and policy questions remain unanswered.

We review the status of ICZM or mismanagement (ICZmisM) in the Black Sea region, building links between environmental problems and policy measures in response, and providing appropriate examples. Recommendations are put forward with regard to major gaps in ICZM at levels of its theoretical development and practical implementation within the region. The review is intended to remind of major disastrous consequences of present complacency and laissez-faire in the management of the Black Sea. This paper calls for urgent implementation of ICZM in the Black Sea at national and regional levels.

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1. Introduction

In ancient times the Black Sea (BS) was unsympathetically called by the Ionian and Dorian Greeks inhospitable sea (in Greek Pontos Axeinos, first in Pindar mentioned, 475 BC). It is also possible that the name *Axeinos* arose by popular etymology from a Scythian word *axšaina* – “unlit” or “dark” (Hrapunov and Gercen, 2007). The name was changed to ‘Pontos Euxinos’ (hospitable sea) after the colonization of the southern BS coasts. In “Odyssey” Homer (800 BC) wrote about the Northern BS coast ‘... a land of somewhere at the World edge, covered with humid fogs and misty clouds, through which no sunlight could penetrate ...’. Nonetheless, such despairing information about the BS coasts has never stopped

savage tribes and quasi-civilized nations to inhumanly fight for the rights to settle around and use the actually plentiful goods available. Before Christ in some BS towns up to 80 000 people resided (Hrapunov and Gercen, 2007), yet, such sizeable settlements were few, and for centuries most of the coastal population remained rural.

The Black Sea (Fig. 1) is surrounded by several high folded mountain chains of the Balkanides-Pontides belts to the south and south-west, of the Great and Little Caucasus to the east and the Crimea Mountains to the north. Low-standing plateaux and the Danube Delta lowland lie to west and north-west of the BS. On the opposite eastern side is the Kolkhida (in Georgian Kolkheti) plain (BSC, 2008). The Black Sea eastern coast is composed of Upper Cretaceous and Lower Tertiary aged flysch strata. Its typical feature is the proportional alternation of soft argillaceous rocks and dense sandstone. The western coast is built of loess, Neogen, Paleogen and

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The Black Sea catchment area (<http://www.envirogrids.net/>) and location of the coasts (red squares) shown in the pictures below.

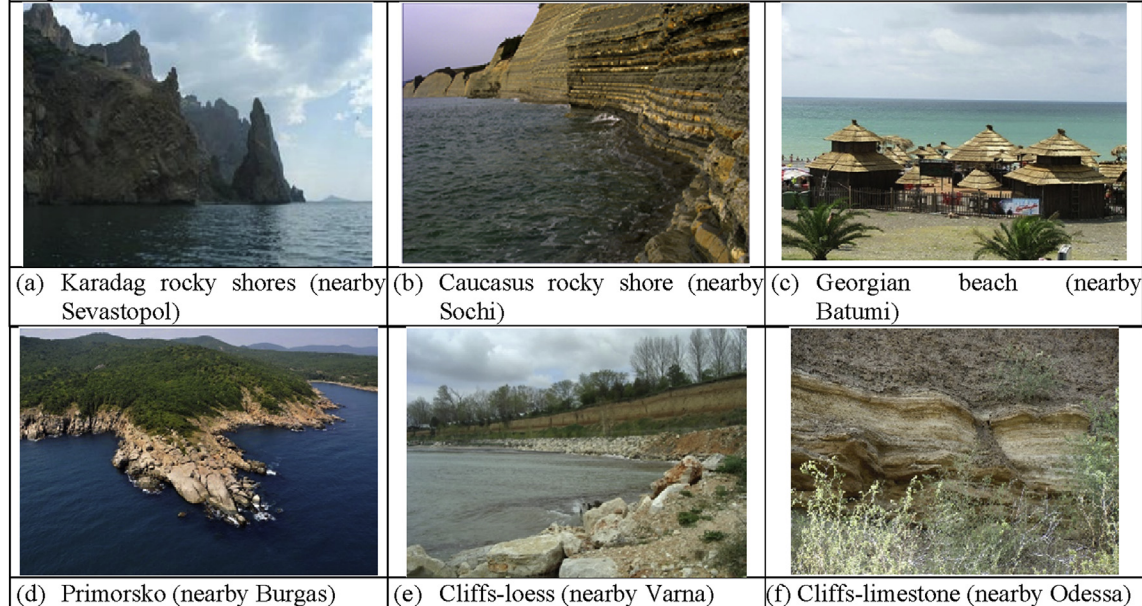


Fig. 1. The Black Sea and its variety of coasts.

Upper Cretaceous sediments. BS coastal waters lie over limestone rocks, sand, clay and silt. The highly indented BS coast has a 'troubled' geological history, with additional claims that the Bible Flood has happened in the BS and the Noah Arc is still somewhere on the bottom of this sea (Ryan and Pitman, 1999).

Until the 20th century BS coastal dynamics were occurring without human intervention (Kaplin et al., 1991; Safyanov, 1978). At that pristine time, the average width of the BS beaches was

reaching approximately 46 m, which were more than sufficient for sea wave's suppression. In the BS, extreme waves occur with 1% probability, e.g. for the north-eastern BS it means wave height of 11.7 m (Russian Maritime Register, 2006). In most cases, beach width of 25 m was still enough for the restraint of extreme waves. Before humans intervened, the BS coast was in a state of stable dynamic balance, where the amounts of incoming and abraded sediment material were approximately equal to each other.

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