

## **Elmina Castle, Central Region of Ghana**

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**Elmina Castle, Central Region of Ghana.** This picture shows the Atlantic coast and Elmina Castle in Ghana, formerly known as the Gold Coast. The castle was built by the Portuguese from 1482 to 1486, originally as São Jorge da Mina (St. George of the Mine), and is currently located in present-day Elmina town. The Dutch seized control of the castle from the Portuguese in 1637, and in 1872, it became a possession of the British Empire. It is the oldest European structure in existence in sub-Saharan Africa. Today, it is a popular historical and tourist site that is recognized by UNESCO as a World Heritage Site. There has been a high rush for gold along the Elmina beach in recent times by small scale miners, which has the potential to impact the coastal environment and the fishing industry. The uncontrolled and haphazard manner of collecting beach sand has the tendency to render the beach highly vulnerable to erosion. This is a worrying situation since the sea level is rising currently over 2 mm/year in Ghana. Destruction of the beach will also open up the coastal area to intrusion by waves and flooding from storm surges, which could affect many settlements within the adjacent lands. In response, the government is spending a significant amount of resources to build up sea defense structures along the shoreline in various parts of the country. (Photograph taken in October 2012 by Dr. Frank van der Meulen, UNESCO IHE-Delft Institute for Water Education, and Deltares, Delft, The Netherlands, and by Prof. Kwasi Appeaning Addo, Institute of Environment and Sanitation Studies, University of Ghana.)

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Dr. Christopher Makowski is the Senior Vice President and Co-Executive Director of the Coastal Education and Research Foundation (CERF), the official publisher of the international *Journal of Coastal Research* (JCR). He received B.Sc. (Marine Biology), M.Sc. (Marine Ecosystem Diversity), and Ph.D. (Coastal Geoscience and Remote Sensing of Biogeomorphological Resources) degrees from Florida Atlantic University of Boca Raton, Florida, USA, and has worked for over 25 years in the coastal research community, holding titles of Assistant Director (Coastal Planning & Engineering's Marine Science and Biological Research Department), Principal Marine Scientist (Collier County, Florida, USA), and Senior Advisor (International Coastal Symposium [ICS]). Dr. Makowski has published numerous peer reviewed papers, authored multiple chapters, and co-edited various volumes in Springer's Coastal Research Library (CRL) Series and Encyclopedia of Earth Sciences Series (EESS). In addition to these accomplishments, he is professionally recognized by the American Academy of Underwater Sciences (AAUS) and is certified as a Master Scuba Diver Trainer through the Professional Association of Diving Instructors (PADI), having logged over 2,000 underwater dives on six different continents. Other professional registrations, certifications, and accreditations include: Coastal Education and Research Foundation (CERF) Board of Directors (Trustees), BioOne Board of Directors, International Society for Reef Studies (ISRS) Member, Florida Association of Environmental Professionals (FAEP) Chapter Member, American Academy of Underwater Sciences (AAUS) Registered Diving Safety Officer, American Association for the Advancement of Science (AAAS) Member, National Marine Fisheries Service (NMFS) Certified Marine Mammal and Protected Species Observer, Professional Association of Diving Instructors (PADI) Open Water Scuba Diver Instructor, PADI Enriched Air Nitrox Specialty Instructor, Emergency First Responder (CPR/FirstAid/AED) Instructor, PADI Specialty Underwater Photographer Instructor, and Divers Alert Network (DAN) Sustaining Member.

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